Final Project Report on

PEOPLE MANAGEMENT

Department of Computer Science and Engineering
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Under the guidance of

Prof. Mr. Giridhar Amaravadi
Teaching Assistant: Priyanka Wakte

Submitted By

Avadhut Vijay Talbar	(1001955622)
Kshitija Shete	(1001821653)
Lavanya Velagala	(1001908911)
Rohan Shetty	(1001969248)
Sandeep Yadav	(1001945732)
Suchitra Subramani	(1001957365)
Vaishali Vanjari	(1001956614)

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1.   INTRODUCTION

People are important to every business and business leader know this very well. Having people management skills is just as important as having skillful people. People management is much more than managing people in the workplace and providing them everything that they need to get their job done. At its core it is about caring for employees, helping them to overcome stumbling blocks, inspiring them to give their best at work, and striving to meet their personal and professional goals. Formal responsibilities like hiring, training and disciplining employees are also part of people management. Business leaders should care about people management skills especially in small organizations since people can make or break the company. Poor people management can result in low productivity, workflow errors, under-skilled teams and employees, conflicts between employees, lack of idea-sharing among teams, lack of professional development, and many more. Whereas on the other end good people management skills can potentially result in high productivity, strong collaboration, low employee turnover, a defined workflow, etc. People management is not limited to a professional team, but it implies to situations that involve a group of people. In an organization, feedback is one of the ways business leaders can learn about how their employee's perspectives about different things within the organization. This feedback helps leaders to change their policy, implement new strategies that could lead to better people engagement and involvement.

2. Why People Management?

In the previous section, we saw how people management is for the success of an organization, for the success of a team. Below we will discuss some of the important aspects for which people management is crucial [7].

2.1 People Have Different Goals

Which one is better having a team goal or an individual goal? There is no clear "winner" as both team goals and individual goals are of critical importance. Team goals and individual goals can help motivate individuals and increase productivity among employees, though they're each better used in some applications over the others. For instance, in our team some might have a goal of improving their personal presentation skills, for some, it might be improving documentation. In a professional environment, a team member might want to impress his boss, while someone else wants to make an impact on the client, some are self-motivated to make an impact or learn new things. But at the end of the day in a team, all members should have their efforts directed in the direction that is most fruitful for the team's and every individual's success. It is the manager's responsibility[9] to establish a team goal, lay out an action plan, and ensure that the team goal aligns with the organization's goal, allowing team members to set their individual goals and help them achieve them.

2.2 People and Productivity

The success of an organization depends on how productive its employees are and how well they engage in a team. Productivity is high when organizations have the right people placed on the right job. People have different responsibilities in a team based on their skills, similarly, people have different productivity on an individual level based on their expertise. It is the responsibility of a manager to identify the expertise of people and assign them to the right task and hire the right people at work. Managers should have metrics to evaluate the productivity of resources in their team on a quarterly or half-yearly or yearly basis. This helps managers keep track of team performance, and also take required action if a team member is unable to give his best, this may include providing motivation through rewards, recognition, compensation, etc. Consider an example of a soccer team, where the manager is the coach who is responsible to identify the skills

of each individual player and giving them the right position to play in the team for the team to succeed.

2.3   Importance of Informal Communication

Informal communication is important at the workplace, as it promotes friendships to develop at work related to things other than work. People who believe they have true companions at the workplace are more likely to enjoy their job, perform at a high level, feel invested in the company, and serve others within the organization[10]. Examples of informal communication in a team could be having a casual conversation over a tea break, over lunch, or at the start of daily stand-up meetings like sharing about your time over the weekend, what was something new you did, etc. this establishes an environment for everyone to get involved, share and participate. Informal communication within an organization helps promotes solidarity.

2.4   Coordination of Work

Coordination among people is critically important in an organization for its success. A team is a group of people with diverse backgrounds, perspectives, skills, thought processes, age, gender, etc. that have been brought together to achieve a goal that would otherwise be impossible single-handedly. Coordination is required among members of the team and within different teams. Proper coordination efforts can be saved by avoiding repeated work in different teams. Conflicts may arise among team members in absence of proper coordination, the misinformation and communication gap can easily be ruled out by having proper coordination[11]. Without a proper channel of communication and coordination, it would be difficult to ensure that business strategies, goals, and missions are communicated to everyone within the organization. Managers should understand the team structure and provide the necessary tools and channels to promote a high degree of coordination at the workplace.

3. CO-ORDINATION MECHANISMS

Co-ordination Mechanisms are formal or informal means which are established to resolve or negotiate planning for a project or a task. Co-ordination mechanisms are paramount when it comes to the ensuring success of a team.

3.1   Need for Co-Ordination Styles

In an era, where without co-ordination there could be chaos and no productivity or direction when it comes to functioning as a team. The five main reasons why a team needs co-ordination mechanisms can be summarized as follows:

I.   **To increase productivity:** Productivity is essential in order to make sure that the team is progressing well. Co-ordination makes sure that various teams work in synergy to increase productivity.

II. **To have efficiency:** Co-ordination in teams makes sure that teams become more efficient and ensure that work gets done before the deadline.

III. **To maintain leadership:** Co-ordination makes it easier for a manager to ensure progress in a team and overlook the status of work done by each team.

IV. **To avoid redundancy:** Redundancy will lead to less efficiency and lesser productivity. Co-ordination in a team makes sure that redundancy does not occur, and productivity is at its fullest.

V.   **To avert inflexibility:** For a manager to make sure that his employees produce fresh ideas and help the company to the fullest, he can make sure to give incentives like settling flexible timings. This can help achieve success only when there is co-ordination in a team.

3.2   Types of Mintzberg's Co-Ordination Mechanisms

Mintzberg's 5 co-ordination mechanisms have set a standard for ensuring the success of an organization

I.   **Simple Structure:** Simple structure is a vertically organized pyramid with vertical lines of authority. Direct supervision of subordinates and a lack of formal support structures are its key characteristics. CEO gets the concentrated authority in this model.

II. **Machine Bureaucracy:** Elevated level of work standardization, making organizational units function together create machine bureaucracy. Tasks are standardized and detailed, thus allowing employees to carry out their work with a minimum of training.

III. **Professional Bureaucracy:** Professional bureaucracy means bureaucratic without being centralized. Reliance on highly qualified professionals makes sure the success of such a system with a high degree of independence. Coordination of functions is achieved by an organization by standardizing the skills and qualifications required to carry out the work of a particular position.

IV. **Divisionalized Form:** As the name suggests this means a division of work to divide the problem into smaller subproblems. The advantage of this divisionalized organizational structure is that the divisions can act with a high degree of autonomy to address their situations, while the central part of the organization concentrates on the big picture. This also ensures that there is no redundancy and that activities are carried out at full productivity.

V. **Adhocracy:** This is performed in industries that are changing rapidly or in project-based companies where projects are all different, such formal structures limit the required flexibility. Adhocracy adapts to whatever situation it encounters, with help of characteristics such as a lack of formal structure combined with a variety of highly skilled employees. In Adhocracy teams are divided into vertical and horizontal matrices, thus making sure that an individual has knowledge of multiple teams.

3.3. Conclusion

Mintzberg's co-ordination mechanisms cover mechanisms that can ensure the success of each type of industry. Professional and Machine bureaucracy can be used for large-scale industries to ensure smooth functioning, no dependency, and maximum productivity. In the same way, Adhocracy, simple structure, and divisionalized form can be used in small-scale industries to divide work and cover up for financial constraints, thus ensuring maximum efficiency.

4.   MANAGEMENT STYLES

It consists of methods and techniques that managers use to coordinate team members' actions and to encourage them to give the best possible performance on the job. This helps the manager to effectively achieve the company's goals.

You can decide your management style Based on many factors as below:
1. Team members' experience
2. The technology used for the project
3. Deadline for the project
4. Type of Organization

The management styles can be distinguished between two dimensions of managing people:

1. Relation direction:

This is about paying attention to an individual and how he interacts with others in the company.

2. Task directedness:

This relates to paying attention to the results that must be obtained as well as the manner in which these results must be obtained.

4.1   Types of Management Styles

You can select a style based on the type of work to be done:

I. Separation style:

For everyday tasks, this management style is frequently the most effective. The major focus is efficiency. Management behaves like a bureaucracy, enforcing rules and processes. Work is organized hierarchically. Decisions are made from the top down, in a formal and authoritative manner. One significant advantage of this approach is that it results in a more stable project organization. True inventions, on the other hand, are difficult to achieve.

II. Relation style:

This technique is typically most effective when people must be motivated, coordinated, and instructed. Individuals are assigned duties to complete. The labor is not routine, but rather innovative, complex, and specialized. Decision-making is a collaborative process that includes

bargaining and consensus building. This style's obvious flaw is that it can lead to unending disruptive gatherings. A significant success component is the manager's capacity to limit efficient decision-making.

III. Commitment style:

This works best when the work is done under duress. For this method to be effective, the manager must understand how to achieve goals while avoiding animosity. Meetings are not used to make decisions. Rather, decisions are suggested by the team's shared vision of the project's aims. A possible weakness of this technique is that, after the vision is agreed upon, the team is not sensitive to changes in its surroundings, but instead mindlessly stumbles along the road sketched out.

IV. Integration style:

This is appropriate in instances where the outcome is unknown. The work is exploratory in nature, and the many activities are strongly dependent on one another. It is the manager's responsibility to stimulate and motivate. Bottom-up decision-making is informal. Individuals are challenged to be their best in this manner, which encourages inventiveness. One potential weakness of this technique is that individual team members' ambitions become divorced from those of the project, and they begin to compete with one another.

5. HIERARCHICAL ORGANIZATION

A hierarchical structure is suitable for larger organizations. In a hierarchical organization, different levels of authority with a chain of command connect multiple management levels within an organization. In a hierarchical organization, the decision-making process flows from the top to down. In hierarchical organizations, the high-ranking people are at the apex level while the low-ranking people are at the bottom. The employees' roles are defined clearly within the organization, with respect to the nature of their relationship with other employees.

Fig 5a. Hierarchical Organization

Advantages:

I. In a hierarchical organizational structure, clear lines of communication are established. For example, employees at entry-level positions would receive their daily assignments from their direct supervisor. The direct supervisor gets the orders from their supervisors.

II. Within the hierarchical organization, there is a clear picture of who has the authority and who does not have the authority. It makes it easier to identify which managers have the power to reward successes or to initiate disciplinary action.

Disadvantages:

    I.   In the hierarchical organizational structure unequal treatment is present. The people at the top of the pyramid are given too much respect, while those at the bottom are given too little respect. When there is no equality in the respect being provided, workers can become less motivated.

    II.   Even if the hierarchical organizational structure is intended to improve communication, it can lower it instead. It can cause teams to create their own jargon, which affects internal communication.

6.   MATRIX ORGANIZATION

In the matrix organization, the team members report to multiple leaders. In a matrix organization, the team members report to the project manager as well as their department head. Types of matrix structures are weak, balanced, and strong. In a weak matrix organization, the team lead has limited authority over the project. In a balanced matrix organization, the team lead and department head have equal authority. In a strong matrix organization, the team lead has more authority over the project while the department head has limited authority. Small businesses follow this kind of organizational structure.

Fig 6a. Matrix Organization

Advantages:

I.   In the matrix organization, one can ensure greater clarity of the project objectives. When the progress is reported to both the project manager and the department head, solidifying project goals is critical. The project organization becomes a priority when the project manager feels supported by other members of senior management.

II.   The matrix organizational structure allows for efficient use of resources because teams include specialists from various departments. It reduces the overhead cost and the amount of time which is needed to complete a project.

Disadvantages:

I.   In the matrix organization teams may face trouble knowing whom to report to and when. While the intention of the matrix organization is to benefit teams, it may complicate the projects.

II.   Conflicting guidance may occur if the project manager and department head aren't on the same page. While the matrix organizational structure is meant to encourage teamwork, it may do the opposite depending on the personalities involved.
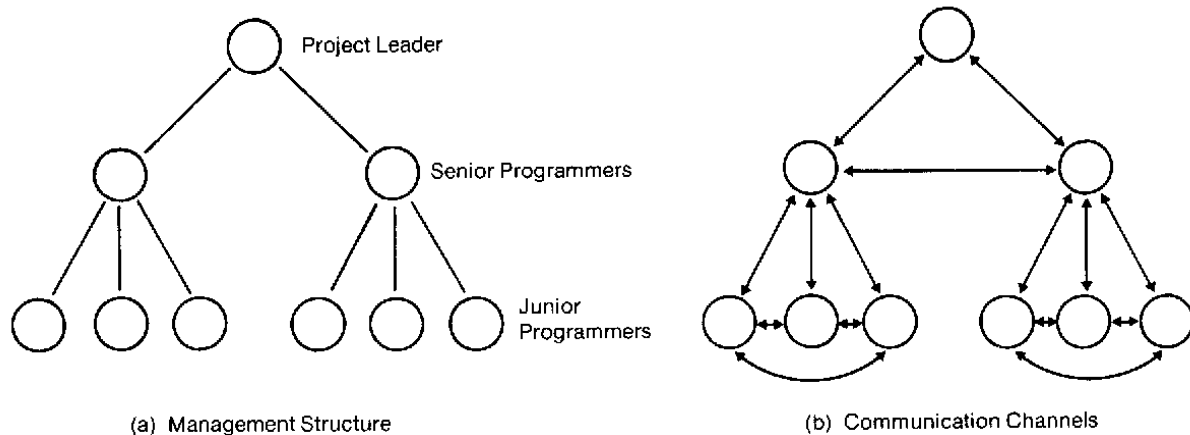
7. CHIEF PROGRAMMER TEAM

Fig 7a. Chief Programmer Team

Chief programmer team concept was introduced by Harlan Mills. The team consists of three main people. The chief programmer is the team leader, or he is addressed as Senior Solution Architect. He takes care of the design and implements key parts of the system. He/ She is also responsible for handling the entire functionalities of the flow of code. He should be well versed in domain of the project that is being implemented. The chief programmer has an assistant who can stand in for the chief programmer. He is basically referred to as Senior Developer who is responsible to fill in the position of chief programmer. Thirdly, a librarian takes care of the administration and documentation. Besides these three people, an additional number of experts added to the chief programmer team who help in documentation and releasing nodes. In this type of organization, high expectations is present on the chief programmer. The chief programmer needs to be very competent in the technical area, but he also has to have sufficient management capabilities. In other words, the chief programmer plays a very central role. He takes all the decisions. The other team members may well challenge some of his qualities. The early notion of a chief programmer team seems somewhat elitist. It resembles a surgeon team in its emphasis on highly specialized tasks and charismatic leadership. The benefits of a team consisting of a small group of peers over huge development teams struggling to produce ever larger software systems.

Advantages:

I. One single project will be completely developed with all the functionalities without creating any hassle, as the kernel organization consists of only three main people.

II. The workflow design is very lucid and smooth.

III. Faster implementation of work.

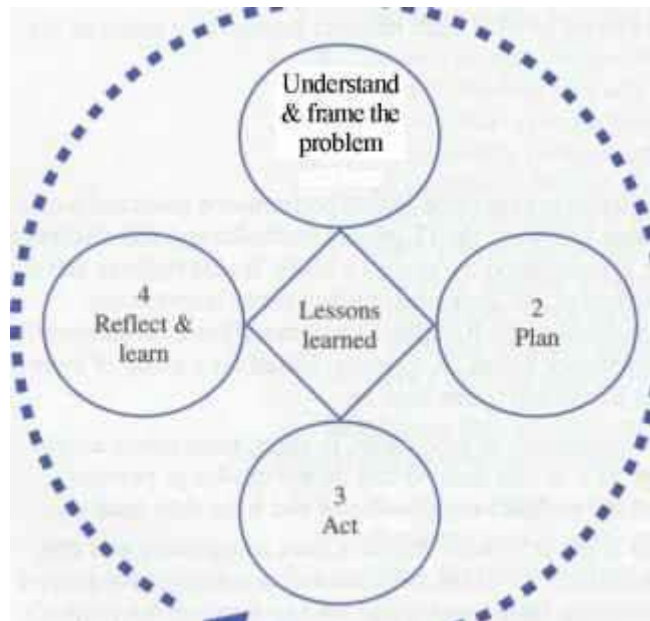IV. Works well for small projects with less budget.

8. SWAT TEAM

Fig 8a. Swat Team Organization

Swat team (Skilled with Automated Tools) is kind of team organization in which a brainstorming session will take place among the senior developers. This kind of team organization is utilized when a new technology must be implemented. In projects with an evolutionary or iterative process model such as RAD, a project organization known as the SWAT team is sometimes used. SWAT stands for Skilled with Advanced Tools. We view the SWAT team as a software development version of a project team in which both task and relation directedness are high. A SWAT team is relatively small. It typically has four or five members. Preferably, the team occupies one room. Communication channels are kept very short. The team does not have lengthy

formal meetings with formal minutes. Rather, it uses workshops and brainstorming sessions of which little more than a snapshot of a white-board drawing is retained.

A SWAT team typically builds incremental versions of a software system. In order to do so effectively, it employs reusable components, very high-level languages, and powerful software generators. The work of team members is supported and coordinated through groupware or workflow management software. In order to move people to the work within an organization, team structures based or hierarchically based are effective strategies for dealing with organizational complexity. The Swat Team pattern can serve organizations, in both the "Agile Maturity" and higher levels, as an important method for people getting involved with the work. As in the chief programmer team, the leader of a SWAT team is like a foreman in the building industry: he is both a manager and a co-worker. The members of a SWAT team are generalists. They may have certain specialties, but they must also be able to do a variety of tasks, such as participate in a workshop with customers, build a prototype, and test a piece of software.

Team motivation is very important in a SWAT team. A SWAT team often adopts a catchy name, motto or logo. This label then expresses their vision. Individuals derive pride and self-esteem from their membership of a SWAT team.

Advantages:

I. New technology-based projects can be easily implemented using SWAT team organizations.

II. This kind of team organization has been well-organized for innovative big projects.

9.   AGILE TEAM

During the project cycle, the Agile Teams are small, self-organized, and extremely focused on delivering the product or service. Typically, the agile team consists of five to seven team members who all contribute to the result. The Agile Team follows a different approach than a traditional team and uses the same approach as a SWAT (Skilled with Advanced Tools) Team. There is a team leader or project manager in the traditional team to assign roles to the teammates. In contrast, Agile teams consist of team members with equal responsibilities and independent workloads.
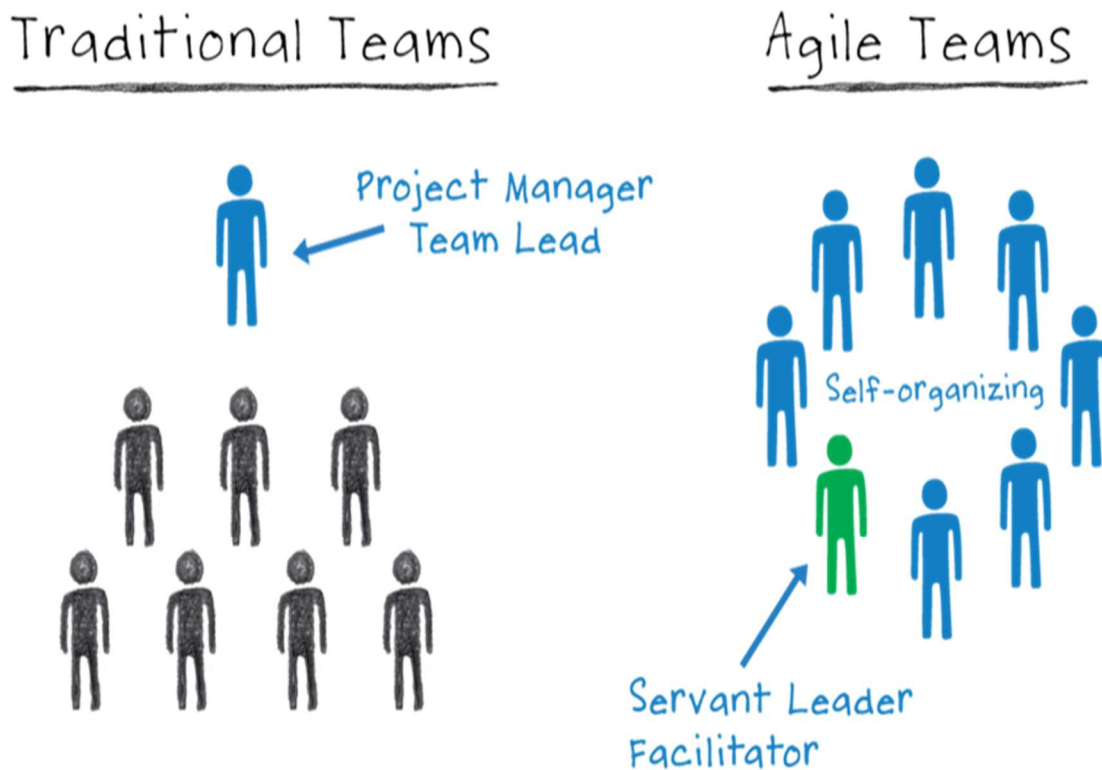

Fig 9a. Agile vs Traditional team

The Agile team shares the following advantages:

I. **Cross-functional:** The Agile team is cross-functional. The result is that each team will include members with a variety of specialties who are effective at achieving a common goal. Testers, developers, analysts, and others may be on the team. However, each of them contributes to the same end goal.

II. **Service-oriented:** The Agile team is service-based rather than looking them up as an expendable resource. The Agile team is an ecosystem of interdependent services where each service evolves on its own to ensure symbiosis between all teams. Hence, optimizing the entire value flow to your customers can be achieved from localized optimization at the service level.

III. **Self-disciplined**: In the Agile team, team members must practice self-discipline when they develop software that fails tests. If they are unable to refactor a piece of code after incorporating it, they must step back and redo their work.

IV. **Evolving policies:** The policies are explicit and open to everyone. A collaborative approach will provide room for discussions and improvements. This idea is so the agile team to see how they offer services to the market but then gradually adapt how they deliver value from the perspective of the customer.

V. **Servant Leader facilitator:** Due to the different mindsets of team members, conflicts may arise between them. To resolve these issues, a Servant Leader facilitator is chosen from one of the team members.

10. OPEN-SOURCE SOFTWARE DEVELOPMENT

Open-source software development is a virtual networked organization. Open-source software development is a virtual networked organization. The main difference between closed-source software development and open-source software development is that closed-source software development follows a traditional, heavyweight, and hierarchical structure, whereas open-source software development provides an open platform, efficient, and effective ways to deliver software or end-product.
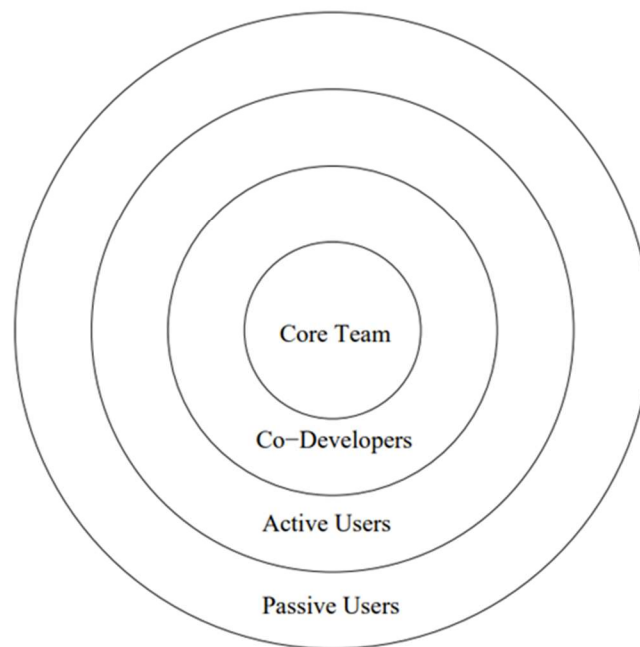

Fig 9a. Open-source development team structure

Open-Source Software Development follows an onion-like ring structure that consists of 4 layers, viz. Core Team, Co-developers, Active Users, and Passive Users.

I. **Core Team:** It consists of 6 to 7 experienced developers. They are mainly responsible for developing software or end products. They are also responsible for changes initiated by users.

II. **Co-developer Team:** It consists of experienced developers. They provide support to the core team. They help core team members to perform testing and to find bugs and fix them using automated tools.

III. **Active Users:** They are the main users of recently released software or end products. They provide feedback and requests for reports.

IV. **Passive Users:** They are merely users of the released stable software.

There are some challenges to face during open-source software development:

I. It requires motivation to remain active to be up to date.

II. There is a need to resolve issues such as disagreements between the developers. Team members are working with different mindsets and using different and different approaches. This may cause conflict between them.

III. Communication needs to be effective as team members tend to use configuration control tools and mailing lists for communication.

IV. The coordination between team members to be handled to deliver effective and efficient software or end-product.

11.   GENERAL PRINCIPLES FOR ORGANIZING A TEAM

Many evaluations on productivity in software development projects have repeatedly revealed that factors relating to team capabilities have a considerably higher impact than any other factor. Morale, group norms, and managerial style all have a greater role than things like the usage of high-level languages and product design complexity.

Below are the general principles for organizing a team and these general principles can also be applied to not only team organization but also to the organization of software development projects.

11.1   Use Fewer, Higher-Quality Personnel

A small group of people usually achieves the highest levels of productivity. Novelists, soccer players, and bricklayers all fall within this category. There's no reason to suppose that doesn't apply to programmers and other workers in the software industry as well. In general, large groups will require a lot of communication and this might lead to errors or miscommunication which will have a negative impact on productivity.

11.2 Try to Match Tasks to The Available People's Strengths and Motivation

To put it another way, make sure the Peter Principle doesn't apply to the team. Excellent programmers can only advance to managerial positions in many firms. It is far preferable to provide job opportunities in the more technical areas of software development and maintenance as well.

11.3 In the Long Term, It Is Better for An Organization If It Assists People In Getting The Most Out Of Themselves

As a result, you should avoid pursuing either of the following options:

I. The **Reverse Peter Principle** states that people ascend through the ranks of an organization until they become indispensable. A programmer, for example, may become the only specialist in a certain system. If he does not have the opportunity to work on something else, it is likely that he will leave your company due to a lack of a more fascinating and challenging activity. You're in serious trouble at that moment.

II. The **Paul Principle** states that people ascend through the ranks of a company until their expertise becomes obsolete after five years. Given the rapidity with which new technologies are being developed, when new breakthroughs in software engineering, and computer science in general, enter the market, it is critical that people have the opportunity to learn and grow.

11.4 It's A Good Idea to Pick Folks Who Will Form A Well-Balanced And Harmonious Team

In general, this suggests that having a few top experts is insufficient. A soccer team requires both regular and elite players. In the same way, choosing the right people and putting together a proper group of people for a software project is a similar and difficult task.

11.5 Someone Who Does Not Belong to The Team Should Be Removed

We are frequently tempted to wait a little while, see how things develop, and hope for better times to come if it turns out that a team does not function as a cohesive unit. This is harmful in the long run. These are the various principles that can be implemented while organizing a team.

12. CONCLUSION

Employee engagement, retention, and development are all dependent on good people management. People management is important in a variety of scenarios at work, including resolving interpersonal disputes, keeping track of deadlines, and creating a positive corporate culture. In short, business executives should be concerned about their employees' management skills because they can make or ruin a company. Ineffective people management can reduce productivity, distract employees, and hinder innovation in a company. Good people management, on the other hand, may boost productivity, engage employees, and foster an innovative culture that can propel a company to the top of its industry.

People management is difficult, and the best approach will differ from firm to company. Some general guidelines for establishing strong people management in your company are creating a learning culture and giving constant feedback to your employees. By following these guidelines processes can run smoothly and make a significant impact on the organization.

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14. Contribution of Each Team Member

All the members contributed equally and did justification with the assigned topic under the umbrella of people management. We conducted 3 meetings overall, for the presentation and final report. All the members attended the scheduled meetings and were punctual when it came to time. Topics covered by each member are as listed below.

Sandeep Yadav: introduction, why people management, final report formatting.

Rohan Shetty: co-ordination mechanisms, Mintzberg Co-ordination mechanisms.

Avadhut Vijay Talbar: management styles and its types.

Kshitija Shete: hierarchical organization, matrix organization.

Suchitra Subramani: chief programmer team, swat team.

Vaishali Vanjari: agile team, open-source software development.

Lavanya Velagala: general principles for organizing a team, conclusion.

All the members updated content related to the sections they presented on the shared document with the required font style, font size, and alignment.