CHAPTER 3

OBJECTS AND METHODS

3.1 Research Object

The object of the research is NewFix Tailoring Ltd which is located in Port Moresby, National Capital District, Papua New Guinea. The research mainly focuses on its Human Resource Management (HRM) system and was carried out at Indonesian Computer University (UNIKOM), Bandung, Indonesia.

3.1.1 History of the Company

NewFix Tailoring Ltd was established in 2005 by Mr. James Ogia and Mrs. Donna Ogia with their own initiative to produce clothes, blankets, pillows, and uniforms for schools, companies, government organizations, and name tags for students, ID tags for workers and staff of companies and government departments.

The overall operation of the company was good and production rate was at its best. Such as better salary for employees, employees so committed to their work, better communication within the work force, time punctuality was good and all employees' health was good. However, as the years went by the company faced some problems within the Human Resource Department (HRD). The problems faced were no proper and systematic process or system of recording of the employees personal bio data, employees are not sure about their entitlements and thus miss out, discipline procedures, need to follow set procedures to discipline officers to safeguard their rights' and training rights, if the administration sponsors them, employees are entitled to certain rights like their pay and book and living allowances in which the employees are not receiving and some other problems within in the Human Resource Department (HRD).

Due to Technology enhancement and facility improvement such as better internet, cellular phones, reducing human task by using robots, automation systems, have brought human changes to human activities, including businesses. Change of time calls for a different approach on the things humans do. With the transformation of the society from a simple to a high complicated and technological one, it is just proper to equip one's self proper tools to succeed. In this competitive age of business, NewFix Tailoring Ltd is in great need to improvise its Human Resource Department (HRD) in order to adapt to this information or digital age.

To produce a better production and output and achieve its' long term goals, the system of company (NewFix Tailoring Ltd) must be change from semi-manual meaning some parts of the company using computer and other parts manual system as such all parts of the company must be changed to automated system. Automation is the utilization of technology to replace human with a machine (especially computer) that can perform quickly and more continuously that is, the automated Human Resource Management (HRM) consist of task such as recruiting and employment process, staff profiling and creating time schedules, creating leave and financial records, entitlements and further study schedules, producing employee references and so on. This would greatly have an effect on the businesses progress and production as well.

As a result NewFix Tailoring Ltd can and will be able to produce better and more tailoring production and could be ranked among some of the best tailoring companies in Papua New Guinea (PNG).

3.1.2 The Role of Strategic HRM

Technology changes very quickly, forcing the organization to adapt to the business environment. The change has shifted the functions of human resource management so far only considered as the administration, relating to the recruitment staffing, coordinating conducted by the personnel only.

Currently HR change management and stand-alone specialty functions into an integrated function with all other functions in the organization, to jointly achieve the goals that have been defined and has a highly strategic planning function within the organization, in other words the old HR function into a more strategic nature. Therefore HR management has an obligation to: understand the increasingly complex changes that always occur in the business environment, must anticipate changes in technology, and understand the international dimension began to enter the business as a result of rapidly growing information. Change the paradigm of the Human Resource Management has a different focus in performing their functions within the organization.

There is a tendency to recognize the importance of human resources in the organization and focusing on the contribution of the HR function for the successful achievement of strategic objectives of the company. This can be done by the company to integrate the decision-making strategy with the HR functions, the greater the chance to gain success.

The level of integration between strategic planning with HR functions realized in 4 (four) kinds of relationships:

1. Relations Administration

   Here top managers and other functional managers consider HR function is relatively unimportant and not as a limitation views human beings as well as assets of the company in making business decisions.
2. Relationship One Direction

   There is a sequential tie between strategic planning with HR functions. HR function design programs and systems to support the company's strategic objectives. So HR reacts to strategic initiatives but has no effect, because even though it was considered important but not yet considered as a strategic business partner. Relationship Two Directions characterized by reciprocal and interdependent relationship between the strategic planning of human resources. HR functions considered important and trustworthy.

HR plays a role in determining the strategic direction of the company and has been used as a strategic partner.

3. Integrative Relations

   Marked by a dynamic relationship and inter-active between the functions of HR and strategic planning. Here the HR managers viewed as truthfully strategic business partners and are involved in strategic decisions.

3.1.3 Incentives Formation of Effective Integration

The driving factor is as follows:

a. Environment: The strength of the environment is very instrumental in carrying increased competition, changes in technology and changes in workforce demographics.
b. History and culture of the organization: culture-oriented organization strong human resources capable of developing a natural relationship between the activities of human resources with strategic planning.
c. Strategic: The strategy of concentrating on one type of core business to spur the potential for the creation of a relationship with the strategic planning of human resources is increasingly integrity because it allows the development and implementation of programs and systems of human resources across the enterprise.
d. Structure: The placement of human resources unit in the organizational structure, human resources senior executive was given the same status as other functional directors
e. Skills and values espoused executive: human resources have a good knowledge of the business and is able to provide input into the strategic planning process.
f. The skills and value-owned Employees: HR functions received aid management to solve the employment problem will reinforce the importance of the HR function.

g. Management system which includes a system of rewards, communication and information systems and human resources so that human resources will be increasingly integrated strategic planning if the senior executives have a substantial percentage of compensation to bear the risk.
h. Communications systems that have the goal of building awareness of the manager of the company's strategic goals and encourage them develop the motivation subordinates database supported by well-developed human resources.

According to Nkomo (1980) the evolution of human resources management through three stages, namely;

1. Definition Stage: That is when the personnel manager organizes programs of less help to reduce the clutter of employees and the possibility of a split.
2. Manpower Planning: This stage is used needs of workers and the recruitment selection, training manpower to ensure the fulfillment of the target.
3. When the Strategic HR Management HR managers should be more proactive in solving problems in the management of the company and contribute to greater organizational effectiveness.

3.1.4 Old Paradigm HRM

Human Resources Management which is usually called personnel management, as long as it has the function of specialization with regard to the activities of administration of employee raises, namely the problems with recruitment, training and wages and so on. The results of good HR management can be ensured that the employees who were recruited have met the criteria required in accordance with the needs of production, other functional parts and receive the appropriate rewards. Here we see that the old paradigm of human resource management more functional

management serve others in the organization, such as the functions of marketing, finance, production or other.

With the changing business environment caused by technological change and the impact of globalization, it is imperative for HR management to change its role to have a more strategic function within the organization. Therefore, the HR department must carry out a new role and cooperate with other line of a manager to make planning in an integrated manner in accordance with the needs of the organization. Planning integrated manner in accordance with the needs of the organization. Such changes occur with regard to (Schuler, 1990).

1. Changes in the business environment that is very fast and the high level of uncertainty.
2. Willingness to adapt quickly to predict the unexpected changes.
3. The increase in costs, due to competition for high profits.
4. Rapid technological change led to increased demand for employees with better skills through education and training.
5. The organization is more complex with regard to products, geography, business function and consumer (market).
6. The response to external forces associated with the prevailing laws and regulations, legal proceedings, and other regulations.
7. Changes in the organizational structure more flexible, more flat (flatter) and more (leaner) cause the number of employees and the different types of work facing.
8. Increased competition and international cooperation.
9. There is a diversity of workforce.

   As a result of these changes, HR must be able to adapt quickly to predict the unexpected changes with changes in the old paradigm to a new paradigm for these changes as well, providing a good opportunity for the management of human resources and line managers.

Table 3.1 The paradigm shift in the HR Department.

Paradigm	Old paradigm	New Paradigm
Target	Profit	Consumer satisfaction
	Productivity	Quality
	Individual	Team
Design Work	Efficient	Quality
	Productivity	Customization
	Standard	Innovation
Structure	Centralization	decentralization
	Little involvement of line managers	
	Competition	
Communications	One way	Two way
	Top down	Bottom up
	Focus to organizational structure	Focus on HR
Basic Compensation work	Individual	Team or group

Source: Adapted from Blackburn and Rossen (1993) and Marco (1997)

3.1.5 New Paradigm HRM

Business environment changes very fast and complex as demographics, geography, type of business, the environment, and the impact of globalization, requires organizations to adapt quickly to environmental turbulence by being proactive. This means that human resource management must be able to anticipate the developments

that are being and will happen, and then perform various actions to address these challenges, which in turn can create a competitive advantage that is not owned by other organizations, given the traditional forms of competition such as lower production costs, improved technology , velocity distribution, the efficiency of the product as well as the development of quality products will be easily imitated by competitors.

With such claims, is a must for HRM to change its role oriented "result". Thus the HRM department must act as mite for other functional management or line manager, meaning that HRM should be actively involved in the planning, management and control of an organization which deals with the allocation and development of human resources. Changes in the role of a responsive system of work being proactive and functional structure to a more flexible structure and implementing strategic policies. It becomes human resources have an important role for the success of the business that is associated with an increase in profit, competitiveness, adaptability also flexibility.

3.1.6 HRM Role to Achieve Competitive Advantage

For the purpose of human resources provide a greater contribution to the organization to achieve competitive advantage necessary strategies in an integrated HR planning. The activities of the HR strategy based cooperation between the HR departments in an integrated manner. The activities of the HR strategy are based collaboration between HR departments and line managers with shoots management engagement in explaining the vision and mission of the organization that can be translated into business objectives that strategy.

The main objective of this strategy greatly improves the performance of current and future ongoing basis so as to maintain a competitive advantage. HRM strategy development process to benefit the organization, namely:

1. Define constraints chance HRM in achieving its business objectives.
2. Clarify new ideas on issues HRM results-oriented and
3. Give a broader perspective
4. To test the activity of management commitment, creating a process of allocating human resources for specific programs and activities
5. Focusing on long-term activities is chosen by considering the first priority for the next 2 or 3 years.
6. Perform a strategy that focuses on the management of the HR function and development staff that blessing.

HR departments can create a competitive advantage with four approaches, namely:

1. Strategic partners a manager partner senior and line managers in implementing the planned strategy, translate business strategy into action with the diagnosis of the organization, namely the system of assessment (the assessment) and the collective organizational practices with business objectives that can be formed at every level of the organization.

2. Administrative Expert, Become an expert in managing the implementation of the work as well as administrative efficiency in order to produce output at a low cost However the quality is guaranteed. These undertakings can be done by re-engineering (reengineering), including re-engineering the human resources field. Being an expert administration need to master two phases of engineering back. First, process is the improvement, focusing on identifying processes that are ineffective and plan alternative methods to improve quality of service. Both think of the re-creation (rethinking value creation values) that the process began subscribers. So as to change the focus of work of what can be done into what should be produced.

3. Employee Champion, to mediate between the employees and management to meet the interests of both parties. With businesses increasingly strong competition led to demands for higher employee management. Therefore, a manager should pay

attention to the line of employees related to: First, reduce the demand (demand) by reducing the workload and balancing the resources owned by the employees. Secondly, the level of resources to help employees define new resources (in employees) so that they can adapt to the needs of the organization. Third, the changing demands to be a resource to help employees learn how to transform demand into resources.

4. Change agent, becomes an agent of change, refine processes and culture that can increase the organization's capacity to change. There are three types of changes: first, a change initiative, focusing on the implementation of programs, projects out new procedures. The changeing process in the organization by focusing on how to work together optimally. Third, cultural change will occur if the basic strategies of business organizations conceptualized back.

The fourth case is the new role of the Department of HRM will be able to achieve a competitive advantage by working with line managers and managers. Competitive advantage will be achieved with the three strategies, namely: innovation (innovation), quality improvement (quality enhancement) as well as cost reduction (cost reduction).

HRM (Human Resource Management) is the science and art of regulating the relations and the role of labor efficiently and effectively in order to achieve the common goal of the company, employees and community. An operational function in Human Resource Management is a basic (basic) implementation of HRM processes more efficient and effective in achieving the goals of the organization / company. Operational functions are divided into 5 (five), namely: the procurement function, function development, compensation function, function integration, and maintenance functions.

3.1.7 Suggestion

The success of an organization whether big or small is not solely determined by the natural resources available, but largely determined by the quality of human resources

(HR) whose role is to plan, implement and control the organization concerned. Therefore, it is necessary the development of human resources in our country given the large population, which is a source of productive potential that can be converted into real productive resources.

One special branch management is concerned with the HR Human Resource Management (HRM). Therefore, understanding of matters related to HRM by all members of the community, especially by the company is an absolute and necessary, in order to raise the living standards of the nation.

3.1.8 Components, Functions and Approach of Human Resource Management

The functions and components of HRM are;

A. Components

Component Human Resource Management

Malay SP Hasibuan (2012: 12) divides the human resource management component to be:

1. Entrepreneurs

   Entrepreneur is every person who invests capital to earn income and the amount of income that is uncertain, depending on the profit achieved by the company.
2. Employees

   Employees are sellers and receive compensation in the amount had been determined beforehand. Employees obliged and bound to do the work are given and are entitled to compensation in accordance with the agreement.

The position of employees in the company is divided into:

a. Employees Operations

Operational Employee means any person who is directly obliged to complete the job themselves in accordance with their orders.

b. Managerial Employees

Managerial employee is any person who is entitled to rule his subordinates to do most of the work and done in accordance with the command.

c. Leaders

a leader is someone who uses the authority and leadership to direct others and is responsible for the work of the people in achieving a goal.

B. Functions

Functions of Human Resource Management

According to Malay SP Hasibuan (2012: 21), human resource management functions are as follows:

1. Planning

   planning (human resources planning) is to plan workforce effectively and efficiently in order to fit the needs of the company in assisting the realization of the goal. Planning is done by setting the staffing program. Staffing program includes organizing, directing, controlling, procurement, development, compensation, integration, maintenance, discipline, and dismissal of employees.

2. Organizing

   Organizing is organizing activities for all employees by setting the division of labor, labor relations, and the delegation of authority, integration, and coordination in the organization chart (organization chart). With good organization will help the realization of goals effectively.

3. Direction

   Briefing (directing) is directing the activities of all employees, to cooperate and work effectively and efficiently to help achieve the objectives of the company, employees, and communities. The briefing is done by assigning the leadership of subordinates to do the entire job.

4. Control

   Control (controlling) is controlling the activities of all employees, in order to comply with company rules and working according to plan. If there are irregularities or errors, then held a corrective action and improvement plans. Control of employees includes attendance, discipline, behavior, cooperation, execution of work, and keeps the work environment situation.

5. Procurement

   Procurement (procurement) is the process of withdrawal, selection, placement, orientation, and induction to get employees in accordance with the needs of the company.

6. Development

   Development (development) is the process of improving technical skills, theoretical, conceptual, and morale of employees through education and training. Education and training provided must comply with the requirements of the present work and future.

7. Compensation

   Compensation (compensation) is the provision of direct remuneration (direct) and indirect (indirect), money or goods to employees as compensation for services provided to the company. The principle of compensation is fair and reasonable. Fair interpreted in accordance with

his performance, worthy interpreted to meet the primary needs and based on the minimum wage limit government and based on internal and external consistency.

8. Integration

   Integration (integration) is an activity to unite the interests of the company and the needs of employees, in order to create harmonious cooperation and mutual benefit. The company makes a profit; the employees can meet the needs of his work.

9. Maintenance

   Maintenance (maintenance) is an activity to maintain or improve the physical, mental, and the loyalty of employees, so that they remain willing to cooperate until retirement. Good maintenance is done with the welfare program based on the needs of the majority of employees as well as guided by internal and external consistency.

10. Discipline

    Discipline is the desire and awareness to comply with company rules and social norms. Discipline is a function of human resource management is paramount and key to the realization of the goal, because without good discipline, it is difficult to realize the goal of the maximum.

11. Termination

    Termination (separation) is someone working breakup of a company. Dismissal of employees is due to the desire, the desire of the company, the employment contract ends, pensions, and other causes.

C. Approach

According to Wilson Wake (2012: 24), the approach in the management of human resources is as follows:

1. Mechanical Approach

Mechanical approach is an approach that uses more power in the engine production process. Hiring people need treatment more difficult than the power of the engine, as the process was initiated from procurement, training, until termination of employment with them. Therefore, for the sake of achieving the great advantage, basically most companies choose to use the power of the engine in the production process.

2. Approach Paternalism

Paternalism approach is the approach taken by management in taking a stand as a father in the company to undertake protective action against the employee. This action is usually done to reduce or eliminate outside interference in the company. In the interests of the organization would be an advantage humans, because the needs of workers considered by the company.

3. Social Systems Approach

Social systems approach is the activities of the organization that is determined by factors outside the organization. Social systems approach may involve parties outside the organization who has a very important role in organizational activities.

3.1.9 Organizational Structure of NewFix Tailoring Ltd.

Here is the organizational structure of NewFix Tailoring Ltd.

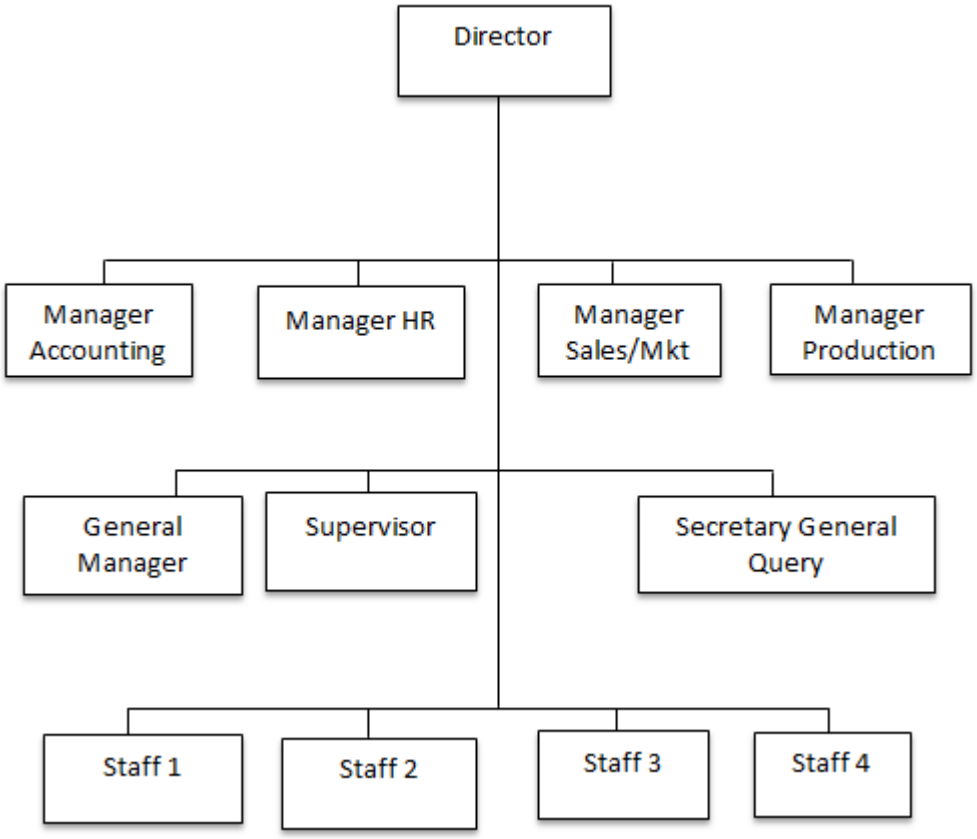


Figure 3.1 Organizational Structure of NewFix Tailoring Ltd.

3.2 Research Methods

According to Frey, Botan, Friedman, and Kreps (1991), "Research methods are particular strategies researchers used to make and collect the evidences necessary for building and testing theories". The preparation of this research uses descriptive qualitative approach, which collects data and then analyzes and explains the observations in the field.

3.2.1 Research Design

According to Green and Tull, "It is the specification of techniques and processes for obtaining the information required. It is the all-over operational pattern of framework of the project which states what data is to be gathered from which source by what process".

The research design is defined as the plan for collecting and utilizing data so that desired information can be obtained. It is the thorough outline of how a study is going to take place. That is, how data can be collected, what tools will be used, how the tools will be used and the intended means for analyzing collected data.

3.2.2 Types and Data Collection Methods

The type and data collection methods are as follows:

A. Collecting Primary Data

Primary data are data previously unknown and which have been obtained directly by the researcher for a particular research project. In this research, these two methods of collecting primary data were taken into consideration:

1. The Observation Method

The researcher observes and records behavior that is relevant to the research. This is done by a close examination of the current problems face by NewFix Tailoring Ltd.

2. The Interview Method

This technique of data collection is simply a face-to-face conversation with the involvement of questionnaires'. According to Arnold (et al 1991), "interview is,

often used as a ‘talking questionnaire’. So the researcher through direct phone call conversation with the respective representatives (staffs) at NewFix Tailoring Ltd made it possible to get the vital data or information needed.

B. Collecting Secondary Data

Secondary data is collected from data sources that have been already existed. In this research, the researcher collected data from previous research, web information, and historical data and information about NewFix Tailoring Ltd.

3.2.3 Method and System Development Approach

This part of the section, it explains about the system approach, the development of systems, methods of analysis and design analysis tools. Following is the description of the approach and system development.

A. System Approach Method

The method the researchers used is systems approach which it uses object-oriented systems approach which are visualized with UML (Unified Modeling Language) and are as follows: Use Case, Activity Diagrams, Sequence Diagrams, Class Diagrams, collaboration Diagram, Component Diagram, and Deployment diagrams.

According to Jian Wang (Information System Analysis Section G01 – Fall 200), “The object oriented approach combines data and processes (called methods) into single entities called objects. Objects usually correspond to the real things an information system deals with, such as customers, suppliers, contracts, and rental agreements. Object-oriented model is able to thoroughly represent complex relationships and to represent data and data processing with a consistent notation,

which allows an easier blending of analysis and design in an evolutionary process". And according to Hoffer (et al. 2002), "The goal of object-oriented approach is to make system elements more reusable, thus improving system quality and productivity of systems analysis and design".

B. System Development Method

The system development method used in the research is the Prototype Model. The Software Prototyping refers to building software application prototype which displays the functionality of the product underdevelopment but may not actually hold the exact logic of the original software. Software Prototyping is becoming very popular as a software development model, as it enables to understand the customer requirements' at an early stage of development. It helps get back valuable feedbacks' from the customer and helps software designers and developers understand about what exactly is expected from the product development.

According to Sona Malhorta (International Journal of Advance in Information Technology), "Instead of freezing the requirements before a design or coding can be proceed, a throwaway prototype is built to understand the requirements. This prototype is developed based on the currently known requirements. Prototyping is an attractive idea for complicated and large systems for which there is no manual process or existing system to help determining the requirements. A prototype is a toy implementation of a system; usually exhibiting limited functional capabilities, low reliability, and efficient performance".

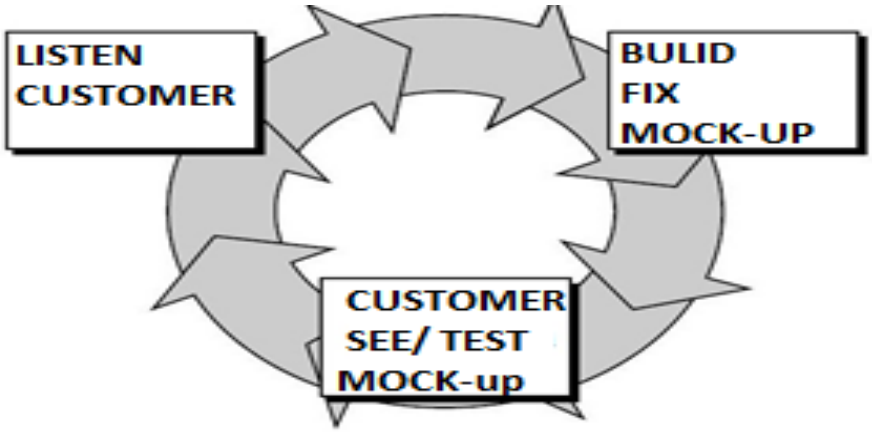


Figure 3.2 Prototype model (source: Seema, Sona Malhotra – "International Journal in Computer and Information Technology")

1. **Basic Requirement Identification:**

This step means understanding the very basics of system requirements of NewFix Tailoring Ltd system especially in terms of user interface. The more intricate details of the internal design and external aspects like performance and security were ignored at this stage.

2. **Developing the Initial Prototype:**

The initial prototype of NewFix Tailoring Ltd management system was developed in this stage, where the very basic requirement was showcased and user interface were provided. These features may not work exactly in the same manner internally in the actual software developed and the workarounds were used to give the same look and feel to the customer in the prototype developed.

3. **Review of the Prototype:**

The prototype of the Human Resources system developed was then presented to the customer and the other important stakeholders in the research. The feedback

were collected in an organized manner and used for further enhancements in the system developments.

4. Revise and Enhance the Prototype:

The feedback and review comments were discussed during this stage. The changes accepted were again incorporated in the new Prototype developed and the cycle repeats until customer expectations were met.

C. Analysis and Design Tools

With a system approach that is object-oriented, the researcher used a modeling language called the unified modelling language (UML). According to IBG (ibm.com website), UML is a visual language for specifying, constructing, and documenting the artifacts of systems. Therefore, the developing system is visualized by the following UML diagrams.

1. Class Diagram

Class diagrams are the most common diagrams used in UML. Class diagrams consist of classes, interfaces, associations and collaborations. Class diagrams basically represent the object oriented view of a system which is static in nature. Active class is used in a class diagram to represent the concurrency of the system. Class diagram represents the object oriented of a system. So it is generally used for developing purposes. This is the most widely used diagram at the time of system construction.

2. Component Diagram

Component diagrams represent a set of components and their relationships. These components consist of classes, interface or collaborations. So component diagrams represent the implementation view of a system. During design phase software artifacts (classes, interfaces etc.) of a system are arranged in different

groups depending upon their relationship. Now these groups are known as components. Finally, component diagrams are used to visualize the implementation.

3. Deployment Diagram

Deployment diagrams are set of nodes and their relationships. These nodes are physical entities where the components are deployed. Deployment diagrams are used for visualizing deployment view of the system. This is generally used by the deployment team.

4. Use Case Diagram

Use case diagrams are a set of use cases, actors and their relationships. They represent the use case view of a system. A use case represents a particular functionality of a system. So use case diagram is used to describe the relationships among the functionalities and their internal/external controllers. These controllers are known as actors.

5. Sequence Diagram

A sequence diagram is an interaction diagram. From the name it is clear that the diagram deals with some sequences, which are the sequence of messages flowing from one object to another. Interactions among the components of a system are very important from implementation and execution perspective. So sequence diagram is used to visualize the sequence of calls in a system to perform a specific functionality.

6. Collaboration Diagram

Collaboration diagram is another form of interaction diagram. It represents the structural organization of a system and the messages sent/received. Structural organization consists of objects and links. The purpose of collaboration diagram is similar to sequence diagram. But the specific purpose of collaboration diagram is to visualize the organization of objects and their interaction.

7. Activity Diagram

Activity diagram describes the flow of control in a system. So it consists of activities and links. The flow can be sequential, concurrent or branched. Activities are nothing but the functions of a system. Numbers of activity diagrams are prepared to capture the entire flow in a system. Activity diagrams are used to visualize the flow of controls in a system. This is prepared to have an idea of how the system will work when executed.

3.2.4 Testing Software

There is a lot of testing techniques that can be used to test a software, including; Black Box Testing and White Box Testing. As for software testing that is done in this project is the Black Box Testing. According to Vangie Beal (webopedia.com), can also be known as, functional testing. A software testing technique is whereby the internal workings of the item being tested are not known by the tester. For example, in a black box test on a software design the tester only knows the inputs and what the expected out comes should be and not how the program arrives at those outputs. The tester does not examine the programming code and does not need any further knowledge of the program other than its specifications."

A. Black Box Testing – Steps

Here are the generic steps followed to carry out any type of Black Box Testing.

1. Initially requirements and specifications of the system are examined.
2. Tester chooses valid inputs (positive test scenario) to check whether SUT processes them correctly. Also some invalid inputs (negative test scenario) are chosen to verify that the SUT is able to detect them.
3. Tester determines expected outputs for all those inputs.
4. Software tester constructs test cases with the selected inputs.
5. The test cases are executed.
6. Software tester compares the actual outputs with the expected outputs.
7. Defects if any are fixed and re-tested.

Black Box Testing Advantages

The advantages are as follows:

1. Tests are done from a user's point of view and will help in exposing discrepancies in the specification.
2. Tester need to know programming languages or how the software has been implemented.
3. Tests can be conducted by a body independent from the developers, allowing for an objective perspective and the avoidance of the developer-bias.
4. Test cases can be designed as soon as the specifications are complete.

3.3 Data

Understanding the data

Data is the plural of datum. Data are particulars about something; it can be something that has meaning. Data can be defined as something that is known or considered or

perceived.

Something unknown is usually obtained from observation or experiment, and it is related to time and place. Assumption or assumptions are an estimate or allegations that are still temporary, so it is not necessarily true. Therefore, the assumption or assumption of truth needs to be studied. According Arikunto (2002), the data is all the facts and figures that can be used as material to construct information, while the information is the data processing that is used for a purpose.

So it can be concluded, that the data is the amount of information that can provide a snapshot of a situation, or a problem either in the form of figures or in the form of a category or description.

3.3.1 Data Types/classification

In accordance with the kinds or types of variables, data or recording the results also have as many types of variables. Data can be divided into specific groups based on criteria which accompany it, for example, according to the composition, the nature, the time of collection, and the retrieval source.

According to data sharing arrangement:

According to the arrangement, the data are divided into single and random data or grouped data.

- Random Data or Data Single or a single random data is data that has not been arranged or grouped into classes' interval.
  Examples:
  Measurement data weight class IX students (in kg): 35 37 39 47 39 32 34 45 50 39
- Data group

Grouped data is data that has been arranged or grouped into classes' interval. Data groups are arranged in the form of a frequency distribution or frequency table

Examples:

Data values of students and the number of students who obtain a particular value for subjects of math class IX.

Continue	Value	Frequency
1-2	lll	3
3-4	lllll	5
5-6	lllll lllll	10
7-8	lllll lllll lllll	15
9-10	lllll ll	7

Table 3.2 – Data Group

This group of data is divided into:

a. Discrete Group Data

   Data obtained from the results included in calculating the discrete data (number of children, etc.).

b. Data continuous group

   A continuous data were expressed to contribute if the data is measured in a scale continuous or data obtained from the results of the measure. Examples of continuous data, namely: height, weight, learning outcomes, motivation to learn and others.

   Shares the data accordingly to its nature. By their very nature, the data is divided over the data quantitative and qualitative data.

4. Qualitative Data

Qualitative data is data that is not in the form of numbers. Qualitative data comes in the form of verbal statements, symbols or images. Example: color, sex, marital status, etc.

5. Quantitative Data

Quantitative data is data in the form of numbers. Example: height, age, number, score learning outcomes, temperature, etc. Shares data according to the time of collection. By the time it was collected, the data is divided into periodic data (time series) and cross section data.

a. Periodic data (time series)

The data is data that is collected periodically from time to time to provide an overview of the development of activities / phenomena. Example: 9 wide price development data staple for the past 10 months were collected every month.

b. Data Cross Section

Cross section data is data that is collected at a certain time to give a picture of the state of development or activities at that time. Examples: 2000 population census data, the data of the UN high school students in 2012, and so on. The divisions of the data by the source were taken. According to sources of uptake, the data can be divided into two types, namely primary data and secondary data.

- **Primary Data**

  Primary data is data obtained or collected by people doing research or are concerned that require it. Primary data is also called the original data or new data.

- **Secondary Data**

  Secondary data is data that is obtained or compiled from sources that already exist. Data are usually obtained from the library or reports / documents that previous researcher. Secondary data is also called the data available. Share data according to the scale of measurement. The scale of measurement is the use of regulations notation of numbers in the measurement. According to the measurement scale, the data can be divided into four types, namely: the nominal data, ordinal data, the data interval, and ratio data.

c. Nominal Data

Nominal data is the data provided on the object or category that does not describe the position of objects or categories of objects or other categories, but just a label or code only. This data is classifying objects / categories into specific groups. Characterized nominal data can only be distinguished from one another and cannot be sorted / comparison. This data has the characteristics, namely:

- Data categories are disjoint (one object only entered in one group).
- Category data is not arranged in a logical
  Examples of nominal scale data:
  Hair color, gender, ethnicity / race, religion and others.

d. Ordinal Data

Ordinal data is data that numbering objects arranged according to the size or category, from the lowest level to the highest level or vice versa by distance / range that is not necessarily the same. This data has

the characteristic traits such as nominal data plus one more characteristic, which categories of data can be compiled / sorted by logical order and in accordance with the magnitude of the characteristics possessed. Examples of ordinal scale data, namely: Level of education, group of employees, caste, etc.

e. Data Interval

Interval data is data with objects / categories can be distinguished among the data to one another can be sorted based on an attribute and has a range that provides information about the interval between each object and same category. The magnitude of the interval can be increased or reduced. This data has the same characteristics with the characteristics of the ordinal data plus one more characteristic, namely the sequence data categories have the same distance. In the interval data has no value absolute zero.

Examples of the interval scale data: Temperature, IQ scores, scores of learning outcomes, etc. Results of temperature measurement (temperature) using a thermometer which is expressed in degrees. Temperature range between 00 Celsius to 10 Celsius have the same distance to 10 Celsius to 20 Celsius. Therefore apply mathematical operations (+, -), for example, 150 Celsius + 150 = 300 Celsius. However, cannot be stated that the object has a temperature of 150 Celsius heat half the size of the object with a temperature of 300 Celsius. Likewise, it cannot be said that the object with a temperature of 00 Celsius has no temperature at all. Figures 00 Celsius have properties relative (not absolute). That is, when measured using a thermometer obtained 00 Fahrenheit Celsius = 320 Fahrenheit.

Intellectual intelligence expressed in IQ. IQ range, 100 to 110 have the same distance by 110 to 120. However, people may not otherwise have the 150 IQ intelligence levels 1.5 times from less that has an IQ of 100.

f. Data ratio

Ratio data is data that has the properties of nominal data, ordinal data and interval data, comes with ownership or absolute zero point value / absolute empirical meaning. Data can be divided or multiplied by the ratio. Thus, the data ratio has properties; can be distinguished, sorted, had the distance, and has absolute zero. Examples ratio scale data: Age, height, weight, etc. Data from the measurement of the weight of an object is expressed in grams has all the properties as interval data. Object that weigh 1 kg significantly different with the object that weighs 2 kg. The size of the weight of the object can be sorted from the heaviest to the lightest. The difference between the object that weighs 1 kg to 2 kg weight ranges equal to the difference between the object that weighs 2 kg to 3 kg. Figures 0 kg showed no object (weight) is measured. Object that weighs 2 kg is 2 times heavier than the object that weighs 1 kg.

g. Function Data

Data basically functions: (1) to make a decision, (2) as the basis for planning, (3) as a means of controlling the implementation of or implementation of an activity, and (4) as the basis for evaluation of an activity.

3.4 Database

Basic Concepts of Database.

Database can be thought of as a filing cabinet. The database is the entire data is stored in a database on each - each table or file according to function, so it can easily be perform searches desired data, so it will quickly gain the information necessary. According Jogiyanto (1999, p217), a database is a collection of data related to each other, are stored in the computer hardware and software used to manipulate it. The database is one important component in information systems, as a basis for providing information to users. According to Connolly (2005, p15), the database is "a shared collection of logically related data and a description of this data designed to meet the information needs of an organization" which has the meaning set of data along with the related logical description, which is in the design to meet the information needs of an organization. Thus the definition of a database is a collection of information stored in the computer in a systematic way so that it can be checked using a computer program to obtain information from the database. The software used to manage and call query the database is called a database management system (DBMS).

3.4.1 Advantage of Database

With the inclusion of information data into a database system, the data can be accessed by everyone who has access to that data. In addition to the facilities shared data, the database has several advantages, among others, namely:

a. Reducing or eliminating duplication of data (data redundant),
b. Improve data integrity,
c. Maintaining the nature of the data independency,
d. Improve data security,
e. Maintain data consistency,
f. Easier data manipulation,

g. Data is easy to use and accessible

3.4.2 Database Management System (DBMS)

Database Management System (DBMS) is software that allows users to define, designing, maintaining, and specify access control to the database. Some of the facilities provided by the DBMS, namely:

a. DBMS allows users to define the database via Data Definition Language (DDL). DDL provides the facility to the user to specify the data type, structure and regulatory restrictions (constraints) on the data to be stored into the database.
b. DBMS allows users to create, modify, delete, and display data from a database by using Data Manipulation Language (DML).
c. DBMS provides access control to the database, namely:
    - Security system, a system that can prevent unauthorized users to access the database.
    - Integrity systems, which are systems that maintain consistency of data storage.
    - Concurrency control system, a system that allows users to access the database simultaneously with other users.
    - Recovery control system, i.e. to restore the database to its previous state in the event of damage or fault in the hardware or software.
    - User-accessible catalog, namely the description of the data in a database.

3.5 XAMPP

XAMPP function itself is a stand-alone server (localhost), which comprises several programs, among others: the Apache HTTP Server, MySQL database, and translator written in the programming language PHP and Perl. XAMPP name is an abbreviation of X (four operating system), Apache, MySQL, PHP and Perl. XAMPP name is an abbreviation of X (four operating system), Apache, MySQL, PHP and Perl. The program is available under the GNU General Public License and is free, is a web server that is easy to use which can display dynamic web pages. To get a yes XAMPP you can download directly from its official website. And here are some other programs definitions contained in XAMPP.

5.5.1 Apache HTTP Server or Server Web / WWW Apache

Apache HTTP Server or Server Web / WWW Apache is a web server that can run on many operating systems like (Unix, BSD, Linux, Microsoft Windows and Novell Netware and other platforms) are useful to serve and the proper functioning of the website. The protocol used for serving web facility / www using HTTP.

3.6 PHP

PHP stands for PHP Hypertext Preprocessor is used as a server-side scripting languages in web development are pasted in an HTML document. PHP allows web use can be made dynamic so maintenance website becomes easier and more efficient. Kasiman Peranginangin (2006: 2). According Swastika (2006) PHP is a scripting language that is placed in the form of a server and processed on the server. The result will be sent to the client, where the user using the browser. PHP is known as a scripting language, which is fused with HTML tags, is executed on the server, and is used to create dynamic web pages as well as Active Server Pages (ASP) or Java Server Pages (JSP). PHP is open source software.

3.7 UML

According Munawar (2005: 17), Unified Modeling Language (UML) is one of the very powerful tools in the development of object-oriented systems. This is because the UML provides a visual modeling language that allows for system developers to create a blueprint or vision of those in the form of a standardized, easy to understand and equipped with effective mechanisms for sharing (sharing) and communicates their designs with others. According Kristanto (2004: 113), UML (Unified Modeling Language) is a programming language that has become standard for designing and documenting software systems. UML offers a standard created to devise a model of the desired system and has been widely used by people.

3.8 MySQL

MySQL (My Structured Query Language) is a database maker program that is open source, meaning that everyone can use and can be run on all platform either window or Linux. MySQL is also a software SQL database management system that is the network so that it can be used for multi-user applications (multiple users). Andrew Kris (2010: 219) According to Abdul Kadir (2008) MySQL is software that is classified as a DBMS (Database Management System) that is open source. Open source stated that this software comes with source code (the code used to create MySQL), besides of course the shape of the operating system, and can be obtained by downloading (download) on the Internet for free.
According to Allen and Hansberger (2002, P220) MySQL is an open source programming language which is the most popular and widely used Linux environment. This is popular because it is s1.

3.9 APPROACH

The approach can be interpreted as a starting point or our view of the learning process. Teacher-centered approach lowers the learning strategy directly (direct instruction), or expository deductive learning. Meanwhile, the learning approach is student-centered learning strategies lowers discovery and inquiry and inductive learning strategies (Sanjaya, 2008: 127).

3.10 SQLite

The database system used by Android are SQLite. SQLite is a SQL-based database, but it has many limitations, one of which is the provision of data types is limited and does not support the concept of normalization. Database created can only be accessed by the application itself. And for what we use SQLite? Commonly used to store data temporarily. While normally used for permanent data web service.

SQLite is an embedded SQL database engine. Unlike most other SQL databases, SQLite does not have a separate server process. SQLite reads and writes directly to ordinary disk files. A complete SQL database with multiple tables, indexes, triggers, and views, contained in a single disk file. Database file format is cross-platform - you can freely copy a database between 32-bit and 64-bit or between big-endian and little-endian architectures. These features make SQLite a popular choice as an Application File Format. Think of SQLite not as a replacement for Oracle but as a replacement for fopen ().

3.11 Software Testing Techniues.

Software testing is the process of evaluation a software item to detect differences between given input and expected output. Also to assess the feature of A software item. Testing assesses the quality of the product. Software testing is a process that

should be done during the development process. In other words software testing is a verification and validation process.

a. Verification

Verification is the process to make sure the product satisfies the conditions imposed at the start of the development phase. In other words, to make sure the product behaves the way we want it to.

b. Validation

Validation is the process to make sure the product satisfies the specified requirements at the end of the development phase. In other words, to make sure the product is built as per customer requirements.

The different types of testing (by Rehman Zafar, CODE PROJECT)

Basics of software testing

There are two basics of software testing: blackbox testing and whitebox testing.

3.11.1 Blackbox Testing

Black box testing is a testing technique that ignores the internal mechanism of the system and focuses on the output generated against any input and execution of the system. It is also called functional testing.

3.11.2 Whitebox Testing

White box testing is a testing technique that takes into account the internal mechanism of a system. It is also called structural testing and glass box testing.

Black box testing is often used for validation and white box testing is often used for verification.

3.11.3 Grey-Box Testing

Grey-box testing is a technique to test the application with having a limited knowledge of the internal workings of an application. In software testing, the phrase the more you know, the better carries a lot of weight while testing an application.

Table 3.3 Three Testing Methods.

Black-Box Testing	**Grey-Box Testing**	**White-Box Testing**
The internal workings of an application need not be known.	The tester has limited knowledge of the internal workings of the application.	Tester has full knowledge of the internal workings of the application.
Also known as closed-box testing, data-driven testing, or functional testing.	Also known as translucent testing, as the tester has limited knowledge of the insides of the application.	Also known as clear-box testing, structural testing, or code-based testing.
Performed by end-users and also by testers and developers.	Performed by end-users and also by testers and developers.	Normally done by testers and developers.
Testing is based on external expectations - Internal behavior of the application is unknown.	Testing is done on the basis of high-level database diagrams and data flow diagrams.	Internal workings are fully known and the tester can design test data accordingly.
It is exhaustive and the least time-consuming.	Partly time-consuming and exhaustive.	The most exhaustive and time-consuming type of

		testing.
Not suited for algorithm testing.	Not suited for algorithm testing.	Suited for algorithm testing.
This can only be done by trial-and-error method.	Data domains and internal boundaries can be tested, if known.	Data domains and internal boundaries can be better tested.

(source: Tutorials Learning, Simply Easy Learning)

Other Forms or Types of Testing Software

There are many types of testing like;

a. Unit Testing

Unit testing is the testing of an individual unit or group of related units. It falls under the class of white box testing. It is often done by the programmer to test that the unit he/she has implemented is producing expected output against given input.

b. Integration Testing

Integration testing is testing in which a group of components are combined to produce output. Also, the interaction between software and hardware is tested in integration testing if software and hardware components have any relation. It may fall under both white box testing and black box testing.

c. Functional Testing

Functional testing is the testing to ensure that the specified functionality required in the system requirements works. It falls under the class of black box testing.

d. System Testing

System testing is the testing to ensure that by putting the software in different environments (e.g., Operating Systems) it still works. System testing is done with full system implementation and environment. It falls under the class of black box testing.

e. Stress Testing

Stress testing is the testing to evaluate how system behaves under unfavorable conditions. Testing is conducted at beyond limits of the specifications. It falls under the class of black box testing.

f. Performance Testing

Performance testing is the testing to assess the speed and effectiveness of the system and to make sure it is generating results within a specified time as in performance requirements. It falls under the class of black box testing.

g. Usability Testing

Usability testing is performed to the perspective of the client, to evaluate how the GUI is user-friendly? How easily can the client learn? After learning how to use, how proficiently can the client perform? How pleasing is it to use its design? This falls under the class of black box testing.

h. Acceptance Testing

Acceptance testing is often done by the customer to ensure that the delivered product meets the requirements and works as the customer expected. It falls under the class of black box testing.

i. Regression Testing

Regression testing is the testing after modification of a system, component, or a group of related units to ensure that the modification is working correctly and is

not damaging or imposing other modules to produce unexpected results. It falls under the class of black box testing.

j. Beta Testing

Beta testing is the testing which is done by end users, a team outside development, or publicly releasing full pre-version of the product which is known as beta version. The aim of beta testing is to cover unexpected errors. It falls under the class of black box testing.

k. Analysis of Current System

Analysis of the system running is the decomposition activity of a complete information system into components that aim to identify and evaluate the problems that arise, obstacles that may occur and the expected needs, so as to propose improvements that will be performed in the system.

3.12 Analysis of Document

Analysis of the document is to analyze the activities of all documents that are used on the basis of an information system that is running. As for the types of documents used in NewFix Tailoring Ltd Human Recourse (HR) system is: Recruitment, Employees Profile, Discipline Procedures, Employees Entitlements and Employees Training Rights.

Table 3.4: Document Analysis.

NO	DOCUMENT NAME	COMMENTARY
1	Recruitment	**Description:** Documents containing information about recruiting. **Function:** Managing applications **Source:** Human Resource Manager (HRM) **Attribute:** Applicant Field of work, Years of experience, previous work experience, achievements,
2	Employees Profile	**Description:** Documents containing information about profiles of employees. **Function:** Manage employee profile. **Source:** Human Resource Manager (HRM) **Attribute:** Employee name, employee id, employee field of work, employee time sheet.
3	Discipline Procedures	**Description:** Documents containing information about disciplinary. **Function:** Guiding employees within the working force. **Source:** Director **Attribute:** Procession of company property, illegal dealings, hacking company information, leaking out company information.
4	Employees Entitlements	**Description:** Documents containing information on entitlements.

		Function: awarding entitlement to employees serving the firm exceeding the set period of time. **Source:** Accountant **Attribute:** served longer in the firm, good production rate.
5	Employees Training Rights	**Description:** Documents containing information on training of employees. **Function:** Enhancing employee productivity. **Source:** Production Manager **Attribute:** Improving employee's skill, commitment, willing to learn,

3.13 ANALYSIS OF CURRENT PROCEDURES

Analysis of the current procedures aim to find out more clearly how the system works and know the problems faced by the system that can be used as a foundation for the design of the proposed new system. The analysis of the school management system procedure that is running in NewFix Ltd which is as follows:

A. Use Case Diagram of NewFix the Ongoing

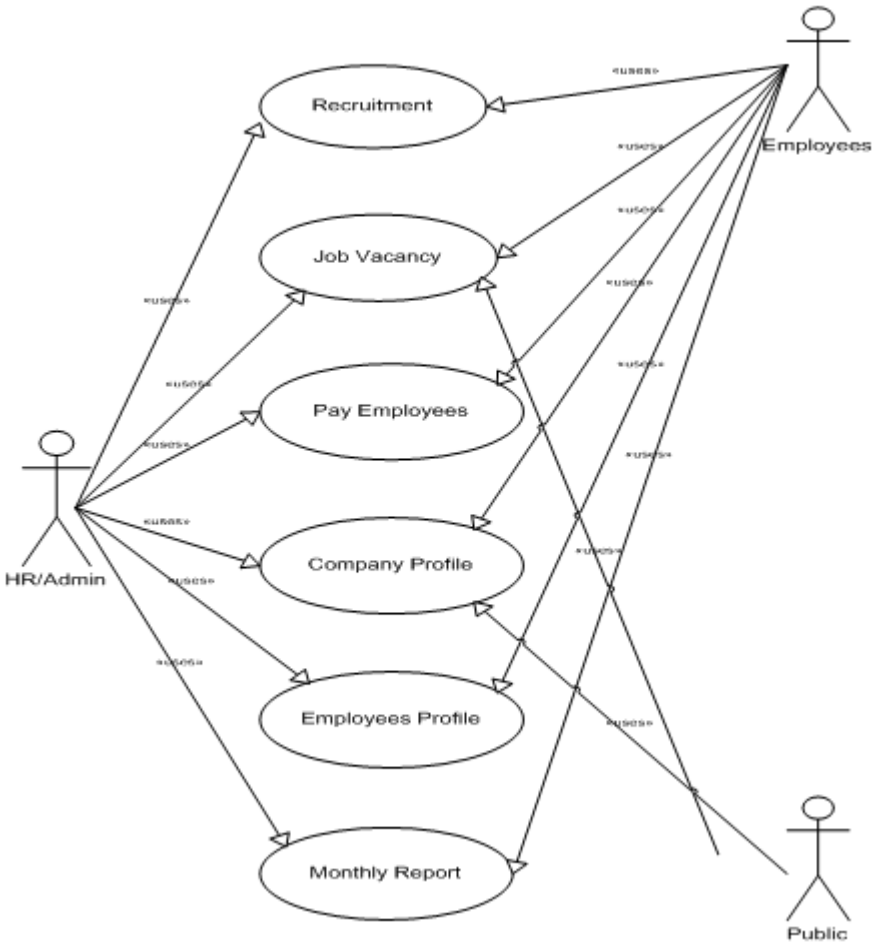


Figure 3.3 Use Case Diagram of NewFix the Ongoing

B. Scenario Use Case Diagram of NewFix HRM System the Ongoing

The Scenario Use Case Diagram that is running is as follows:

1. Scenario Use Case Diagram Recruitment.

The scenario of use case diagram recruitment in the current system is as follows:

1 Use Case Name: Recruitment.

2 Main Actor: HR/Admin, Employess.

3 Purpose: To recruit new employees.

Table 3.5: Scenario Use Case Diagram Recruitment the Ongoing.

HR/Admin	Employee
1. Advertise job vacancy	
	2. Sees the advertisement.
	3. Applies for the desired job.
4. Receives the application and does the screening of the applicants and notifies the qualified applicants.	
	5.Employee receives notification of been selected for the job applied.
Alternative scenario	
6. Applicants not selected are been acknowledged for their interest to the firm.	
	7. Receives the acknowledgement letter from the firm.

C. Scenario Use Case Job Vacancy.

The scenario of use case diagram Job Vacancy in the current system is as follows:

1 Use Case Name: Job Vacancy.

2 Main Actor: HR/Admin, Employess, Public

3 Purpose: Applying for a job not been filled.

Table 3.6: Scenario use case Job Vacancy the Ongoing.

HR/Admin	Employees/Public
1. Advertises the unfilled job	
	2. Sees the advertised job and applys for the job.
3. Receives applications for the interested applicants and does the screening and notifies the qualified applicant when to commence work.	
	4. Receive letter of acceptance for the job including when to start work.
	5.Starts work on the date given.
Alternative Scenario	
6.Unqualified applicants are sent acknowledgement letter for showing their interests.	
	7. Receive the acknowledge letter.

D. Scenario Use Case Diagram Pay Employees.

The scenario of a use case diagram Pay Employees subjects in the current system is as follows:

1 Use Case Name: Pay Employees

2 Main Actor: HR/Admin, Employees

3 Purpose: Basically to pay employees

Table 3.7: Scenario use case diagram Pay Employees the ongoing

HR/Admin	Employees
	1. Fills out the time sheet, signs off for the fortnight and submits it.
2. Receives the time sheet, calculates the pay and pays the employees or deposits pay to the employees account and gives only the pay slip.	
	3. Receive the pay slip as confirmation money already been deposited or receive pay directly.
	4.Print the lecture schedule And given to the staff department for students in pairs clipboard announcement
Alternative Scenario	
5.Incorrectly filled or time sheet not signed is sent back.	
	10. Receives the time sheet, fills it correctly, signs it and sends back the pay slip for payment of salary.

E. Scenario Use Case Diagram Company's Profile.

The scenario of a use case diagram Company's Profile subjects in the current system is as follows:

1 Use Case Name: Company's Profile

2 Main Actor: HR/Admin, Employees, General

3 Purpose: For seeking Company Information

Table 3.8: Scenario use case diagram Company Profile the ongoing.

HR/Admin	**Employees, General Public**
1. Updates news, events and company information.	
	2. Views the updates or new information.
	3. Interested in an information so ask for more clarification.
4. Does the clarification of the information.	
	5. Satisfied with the clarification and leaves.
Alternative Scenario	
	6. If not satisfied then asks and seeks more clarification.
7. Elaborates and makes more clarification.	

F. Scenario Use Case Diagram Employees Profile.

The scenario of a use case diagram Employees Profile subjects in the current system is as follows:

1 Use Case Name: Employees Profile

2 Main Actor: HR/Admin, Employees.

3 Purpose: For viewing, updating and Editing Profile.

Table 3.9: Scenario use case diagram Employees Profile the ongoing.

HR/Admin	**Employees**
1. View, Update, add and edit employee profile.	
	2. Employees sees their updated profile and confirms profile infomation.
3. Receives the confirmation	
Alternative Scenario	
	4. If profile not confirmed meaning that more information yet to give.
5. All information taken and updated	

G. Scenario Use Case Diagram Monthly Report.

The scenario of a use case diagram Monthly Report subjects in the current system is as follows:

1 Use Case Name: Monthly Report

2 Main Actor: HR/Admin, Employees.

3 Purpose: For viewing, updating and Editing Profile.

Table 3.10: Scenario use case diagram Monthly Report the ongoing.

HR/Admin	**Employees**
1. Makes makes the monthly report, distributes and conducts meeting.	
	2. Receives the monthly report, attends the meeting and partakes in the meeting.
3. Clarifies the monthly report	
	4. Listens to the information
Alternative Scenario	
	5. If monthly report not properly done

H. Activity Diagram Recruitment NewFix Limited Human Resource Management System the Ongoing.

This section will be described in the documentation workflow system that is running on the system NewFix Limited HUMAN RESOURCE MANAGEMENT which aims to see the flow of the running system processes.

The activity – activity Human Resource system that is running at the moment is as follows:

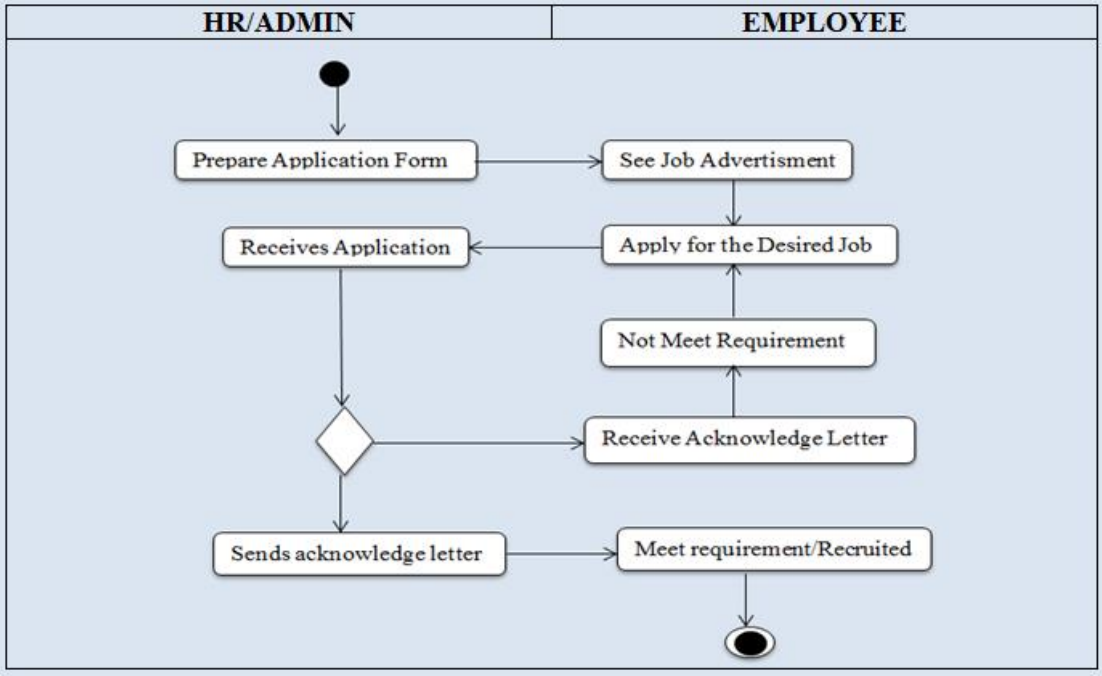


Figure 3.4: Activity Diagram Recruitment the Ongoing.

The diagram above illustrates the process by which the HR prepares the application, the emplotees sees it and applies for the job and sends the application form which is then received by the HR then the HR screens the application form and when the employee meets the requirements then is recruited. If not meet the requirement, then they can apply for the job capable of.

I. Activity Diagram Job Vacancy NewFix Limited Human Resource Management System the Ongoing.

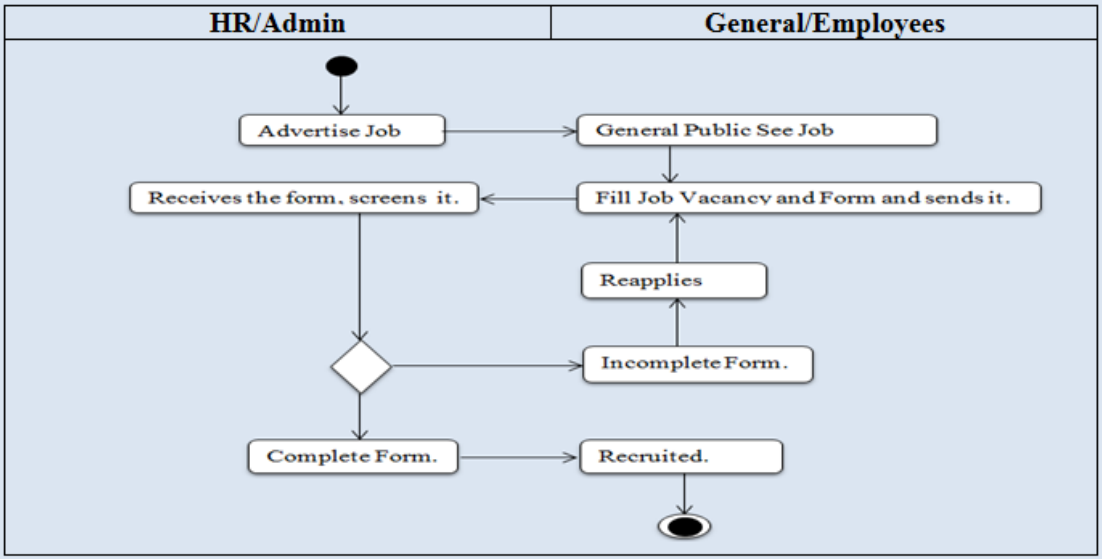


Figure 3.5: Activity Diagram Job Vacancy the Ongoing

The above diagram of NewFix Limited HR clarifies that when a job Vacancy is advertised the general public sees the job, fills out the job vacancy form and sends it. It is then received by the HR/Admin, screens the application and when the applicant completes the form and meet the requirements is accepted or recruited. If incomplete form or not meet the requirements the form is sent back to reapply.

ii. Activity Diagram Pay Employees The Ongoing

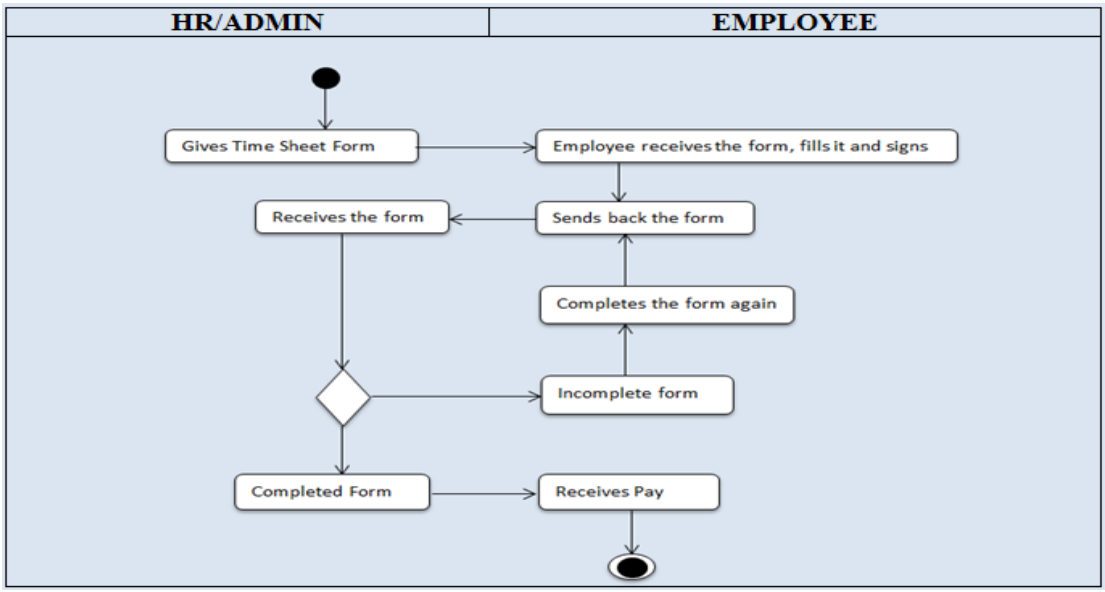


Figure 3.6 Activity Diagram Pay Employees the Ongoing

The HR/Admin issues out the time sheet form to employees. The employees fill out the forms and signs the forms and send s back the form to the HR/Admin. After the approving the form and signs the form then pays the employees. If the form is incomplete sends back the form to the employees to complete the form.

iii. **Activity Diagram Company Profile The Ongoing**

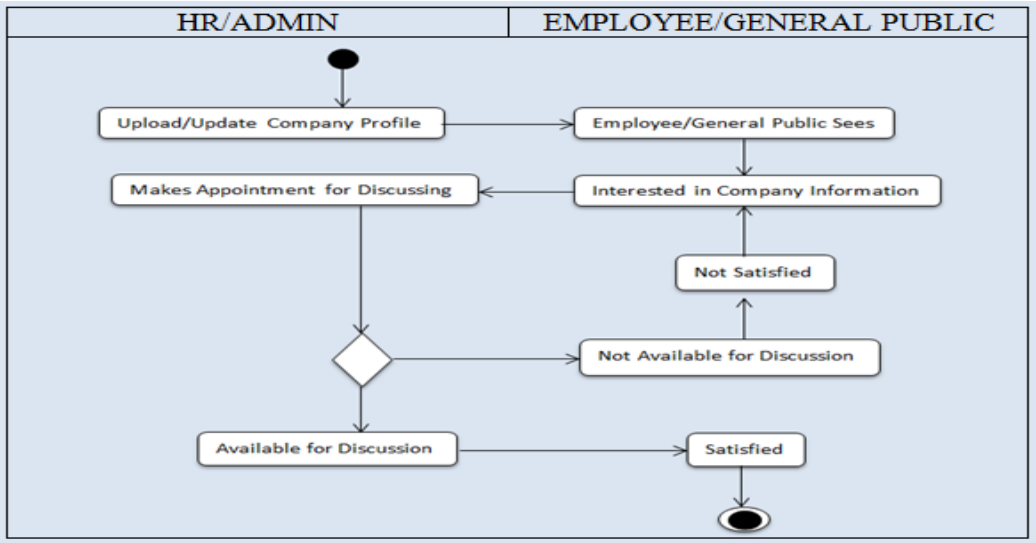


Figure 3.7: Activity Diagram Company Profile

The diagram above shows when the HR/Admin upload/updates the company profile then the General Public/Employees sees and interested makes appointment for further discussion and when HRM is available and when the discussion is done the client is satisfied and when HRM not available for discussion the client not satisfied.

iv. Activity Diagram Monthly Report.

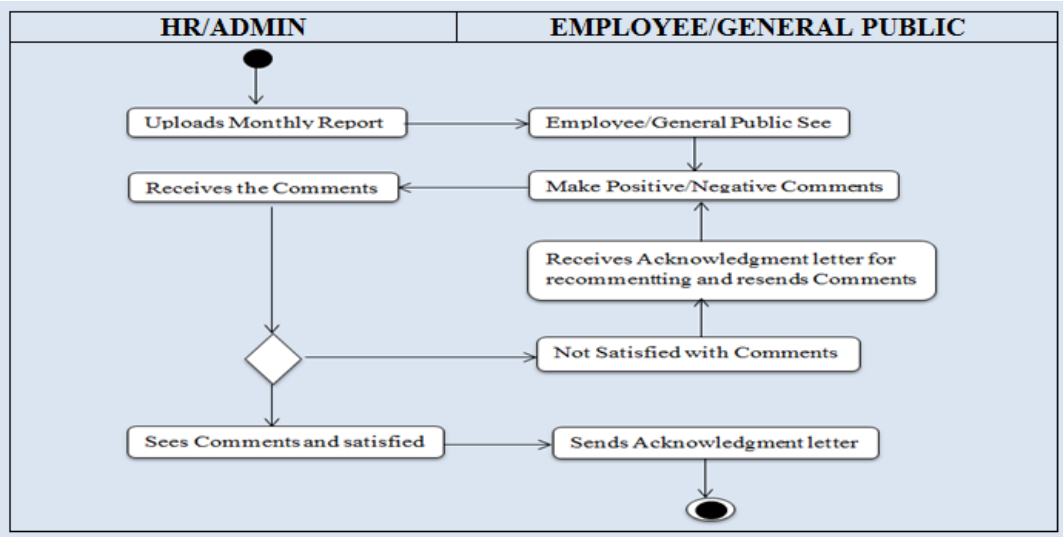


Figure 3.8: Activity Diagram Monthly Report.

The diagram above illustrates that of HR/Admin uploading monthly report and Employee/General Public see, makes positive/negative comments. When HRM satisfied sends acknowledgment letter but if not satisfied send acknowledge letter for recommentting.

3. Ongoing Evaluation System

After going through several stages in analysing the current HR system of which is running in NewFix Tailor Limited, we can see that there deficiencies in the system, these shortcomings depicted in the following table.

Table 3.9 Evaluation System the Ongoing

No	Problem	Part	Settlement plan
1	Recording and updating of data is still done manually.	Human Resource	Creating an application in which there is a menu for entering, editing, and viewing data for employees.
2	Recriutment and application notices are done manually meaning that notices are pinned up on public places or notice boards.	Human Resource	With this application a menu will be created for notifying general Public/Employees which jobs are available or advertised.
3	Information altered, Exposed and lost.	Human Resource	In the new system all information is secured by password which is held only by the HRM.

4	Application forms are been accessed from the office and also when send filled forms are delayed.	Employee/ General Public	A menu in the application will be created for downloading and uploading of application forms same day.
5	Difficulty in accessing information	General Public	Creating systems that provide company information so as the General Public can access information on what the company offers and does.
6	Opinions or views not been expressed	Employee	In creating the system a query menu is created in which quries, opinions, views etc,,, are been send for the HR to see.
7	Cannot edit,view personal profile	Employee	The new system create will now provide for the employee to add, edit and view personal profile given with personal passwords.