Technical Skill Analysis (TSA)

By

Mohd Khir Bin Ahmad

Dissertation submitted in partial fulfilment of
the requirements for the
Bachelor of Technology (Hons)
(Business Information System)

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CERTIFICATION OF APPROVAL

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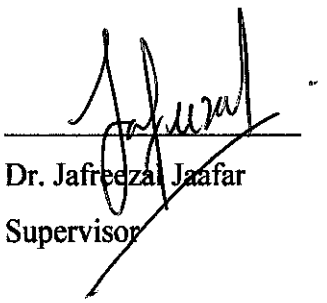
Approved by,



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September 2011

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

MOHD KHIR BIN AHMAD

Abstract

The purpose of the document is to show the basic idea of development, implementation and reaction of Technical Skill Analysis system, an online performance appraisal system project. The project will be implementing for all staff under Regulation Group of Bursa Malaysia. Technical Skill Analysis is developed to allow user to create an efficient way while conducting the performance appraisal process. Currently, the process for decision making consumes a lot of time and inefficient. Therefore, the time decision making for user to generate analysis and action plan affect the whole process.

The problem faced by the Regulation Group of Bursa Malaysia was current performance appraisal method do not support the institutionalization of desired organizational direction. There are a problems in term of effectiveness, security and decision making process which consume a lot of times for analysis part. The scope of study of the project will be among staff of Regulation Group of Bursa Malaysia where the system will be implemented and later will use by them.

The research methodology used was throw-away prototyping methodology. The procedures developed for this project were aimed at overcoming problem faced with the current performance appraisal process and at the same time continuing develop the system in order for developer to save time. This was achieved by evaluating the need for performance appraisals, problems associated with various methodologies and examining the qualities that need to be measured, both in terms of the individual and organization and identifying means of improving organizational performance.

The study on how the implementation of this new performance appraisal system will help for a better performance appraisal process will also be discussed in the paper. The research found that the implementation of TSA ease a lot of process and consume less time yet improved security and effectiveness. As a result, it affects the decision making process and management consequences actions. From the research, it is recommended that current performance appraisal systems be redeveloped to focus on process, outputs, system has own stand-alone server and will expanded to whole company in the future.

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LIST OF ABBREVIATIONS

ACRONYMS	DESCRIPTIONS
TSA	Technical Skill Analysis
PA	Performance Appraisal

CHAPTER 1
INTRODUCTION

1.0 Introduction

The title of this Final Year Project is Technical Skill Analysis (TSA) using web-based platform as a system which conduct performance appraisal process online. This chapter will describe the background of study, problem statement, objective, limitation, pre-requisite, tools / equipment required and short summary of the research project.

1.1 Background of Study

Bursa Malaysia Berhad

Bursa Malaysia Berhad, formerly known as Kuala Lumpur Stock Exchange was established officially in 1973. The Kuala Lumpur Stock Exchange Berhad was demutualized pursuant to the Demutualization Act and converted into a public company limited by shares on January 5, 2007. Upon the conversion, the organization vested and transferred the securities exchange business to a new wholly-owned subsidiary, Bursa Securities, and became an exchange holding company and were renamed Bursa Malaysia Berhad on April 14, 2007.

Bursa Malaysia is an exchange holding company approved under Section 15 of the Capital Markets and Services Act 2007. It operates a fully-integrated exchange, offering the complete range of exchange-related services including trading, clearing, settlement and depository services.

The Regulation Group is one of the business unit existed in Bursa Malaysia. Under Regulation Group, there are eight divisions which are Listing, Market Surveillance, Corporate Surveillance and Governance, Regulatory Strategy, Participant Supervision, Regulatory Policy and Advisory, Investigation and Enforcement. The idea of Technical Skill Analysis system is proposed by Regulatory Strategy division and Surveillance Research and Development department which are one of the departments under Market Surveillance division.

Technical Skill Analysis (TSA)

Technical Skill Analysis (TSA) is an online performance appraisal system that facilitates the completion of performance evaluations online. Regulatory Strategy division of Bursa Malaysia had proposed automation for performance appraisal process among Regulation Group staff in order to measure their level of skill. This assessment is compulsory to all staff under Regulation Group of business unit.

The main objective is to create an efficient way to measure the staff performances based on default skills which are differ from each division by using online web based system. Earlier in 2010, Surveillance Research and Development department under Market Surveillance division had comes out with the ideas to make the system effective by using simple and available software which is Microsoft Excel. However, the system was unable to run properly causes by the problem of data sharing and storage through the network. After the implementation of the system by using Microsoft Excel failed, Technical Skill Analysis need an enhancement as a web based system is an ideal platform to implement the system in order to overcome the problem.

Technical Skill Analysis can act as Management Support System (MSS) and Decision Support System (DSS) because the input data key-in by employees to the system was easily to manage and the data obtained can be manipulate to create an output and help in decision making. TSA system can be more than traditional performance appraisal method because it allows supervisor to pull the data, recall the data from historical archive and storing past evaluations. Furthermore, the system can be access any time from the computer and help administrators to generate the accurate analysis result from this system in a short time.

1.2 Problem Statement

Effectiveness

One of the main factors the development of Technical Skill Analysis (TSA) is to create an efficient way while doing the performance appraisal process. Before this, the process was performed manually and using traditional pen-and-paper method. It consumes a lot of time and cause the evaluation process become slowly and the probability of error is high because administrator will need to analyze the form one by one. There are some research proved that the effectiveness of performance appraisal has traditionally been accessed based on the three categories rater errors, rating accuracy and qualitative aspects of the appraisal, including employee's reactions. [1]

Security

Another problem that leads to the development of Technical Skill Analysis (TSA) is the security part. There is a lot of doubt among employees regarding the privacy and security of their evaluation result. Completed performance appraisal forms are highly personal and confidential and it can be accessible to certain parties only. Traditional process of performance appraisal system is typically stored in the personal file where it can be accidently found by unauthorized party.

Decision making process

Current process of performance appraisal consume a lot of time. So, the decision making process is inefficient. The management needs a lot of time to analyze the result and come out with consequences plan from the performance appraisal process. By the time the consequences plan implements, some of the result from the earlier performance appraisal is not compatible and reliable anymore because a huge gap of time between the assessment and consequences plan period. So, the development of the system will help the management to analyze the result from the performance appraisal process in a short period of time and action plan can be done as soon as possible.

1.3 Objectives

The objectives of this project are:

- To design and develop a new performance appraisal system for Regulation group of Bursa Malaysia
- To make the process and analysis of performance appraisal effective and consume less time by 50 percent
- To test, implement and receive a feedback from the implementation of new performance appraisal system

1.4 Scope of Study

The research and implementation of the Technical Skill Analysis system is limited to employees in one organization and one group of business unit which is Regulation Group of Bursa Malaysia. There is 148 staff at current time under the Regulation Group and the number can increase or decrease in the future. The performance appraisal online system will be implementing to employees for all position which includes the Chief Regulation Officer as a supervisor, division head, department head, senior manager, manager, executive, administration executive, senior clerk, clerk and secretary.

There will be some research on the reaction from the staff with the implementation of the new performance appraisal system. It will be a comparison with the current process and previous process of the performance appraisal.

The development of the system will be using software that already existed at Surveillance Research and Development which is Microsoft Visual Studio and Microsoft Access. The skills and information about both softwares need an effective learning to make sure the development of the online performance appraisal system will run smoothly.

1.5 The Feasibility Study

The project is about the implementation of performance appraisal system for Regulation Group staff of Bursa Malaysia. There is some feasibility study related with the project such as:

Market Feasibility:

The purpose of the development of the system is for in-house purpose and there is no plan to market the system. For future expansion, there will be a plan to implement the system for all staff of Bursa Malaysia.

Technical Feasibility:

They project will be delivered and use by the staff from Regulation Group of Bursa Malaysia. They are no external involving in the project and it will implement on existed system available in Bursa Malaysia.

Financial Feasibility:

The projects will be developing by using available resources in Bursa Malaysia. The usage of software such as Microsoft Visual Studio and Microsoft Access is provided by the company. There will be some fund needed in order to create a server for the system.

Organizational Feasibility:

The development of the system has a full support from the management of Regulation Group in order to improve the current performance appraisal process. The administration of the system will be conducted by the staff from Regulatory Strategy department.

1.6 Pre-requisite

- ✓ Set of question from each department
- ✓ Details of employees under Regulation Group

1.7 Summary

From this chapter of introduction, the rationalization is to enable user to understand and know their roles and responsibilities in an effective manner to use the application. With that, the success of this project will be realized throughout TSA that really meets the objectives or not.

CHAPTER 2
LITERATURE REVIEW

2.1 Performance Appraisal

Identify the definition and purpose of performance appraisal.

Performance appraisal is [1] a formal management system that provides for the evaluation of the quality of an individual's performance in an organization. [2] Performance appraisal is not an event. It is a process. Performance appraisals are most commonly undertaken to let an employee know how his/her performance compares with the supervisor's expectations and to identify areas that require training or development. A performance appraisal, employee appraisal, performance review, or (career) development discussion is [4] a method by which the job performance of an employee is evaluated (generally in terms of quality, quantity, cost, and time) typically by the corresponding manager or supervisor. Performance appraisal is [5] the procuring, analyzing and documenting of facts and information about an employee's net worth to the organization. Performance appraisal is [6] the process of obtaining, analyzing and recording information about the relative worth of an employee. Process by which a manager or consultant examines and evaluates an employee's work behavior by comparing it with preset standards, documents the results of the comparison, and uses the results to provide feedback to the employee to show where improvements are needed and why. Performance appraisals are [7] employed to determine who needs what training, and who will be promoted, demoted, retained, or fired.

2.2 Performance Appraisal Measurement

Reactions of performance appraisal

The effectiveness of performance appraisal has traditionally been assessed with one of the three categories of criteria [8]: rater errors, rating accuracy, and qualitative aspects of the appraisal, including employee's reactions Further, Hedge and Borman [9] predicted employees attitudes about appraisal may play an increasingly important role in appraisal processes as procedures and systems continue to develop over time. Further, research has demonstrated that employee reactions to effective performance appraisal can influence employee motivation, productivity, and organizational commitment [10].

Security of the ratings

Traditional pen-and-paper forms are typically stored by the organization in the employees' personnel file, whereas online performance appraisal systems store evaluations on the organization's server. Ideally, computer storage is more secure, because it is protected by firewalls and passwords. The online system used in this study provided restricted access via usernames and passwords for each user within each role). Employees were only permitted to access their own data, and supervisors were only permitted to access employee data for employees who reported directly to them. Research on computer-mediated communication indicates that people often experience a feeling of privacy or anonymity when communicating through the computer [11] Thus, with the development of the Technical Skill Analysis system; it is expected for the systems to enhance employees of Bursa Malaysia perceptions of the security of their ratings.

Quality of the performance appraisal

Improving quality of performance is one of the primary objectives of the entire performance appraisal process. [1] Quality measures can be objective and subjective. The more that subjective measure of quality can be made objective, the stronger the data are for use both in the appraisal interview itself and any subsequent decisions based on those data. Based on Richard C. [1], there are some possible criteria based on (at can be used in determining the quality of goal or objective achievement:

i) Customer complaints and compliments
ii) Error rate or rejects
iii) Compliance with specifications
iv) Returned goods

At the beginning of the process of performance appraisal, there will be a detail and deep discussion to identify most suitable question and skill set that will be use to evaluate employees. In addition, the employee is given constructive, specific feedback that includes information about what areas need improvement, as well as how to improve. Typically, this information is conveyed in both a written document as well as orally interview between the employee and supervisor. Together, all of this information contributes to the overall quality of the evaluation as perceived by the employee. [12] Proposed the redesign of work processes (such as the development of online performance appraisal system) and technology-driven automation are likely to "reduce costs and cycle times as well as improve quality." [13] Identified several advantages for firms using the system; including collecting appropriate data and converting it to information and knowledge .It will improve timeliness and quality of decision making. From the development of the online performance appraisal system, it is expect that it will ease of administration of a performance appraisal process. The higher quality of performance appraisal process can be creating by the development of the system

2.3 Benefits of Performance Appraisal

Satisfaction with the performance appraisal

One of the factors needs to be review from the development of performance appraisal system is employee satisfaction with performance appraisal because from Giles and Mossholder [14], it relates to employee productivity, motivation, and organizational commitment. Based on Cook and Crossman [15], satisfaction with the performance appraisal captures the extent to which the evaluation process and outcomes met the employee's needs and expectations. It includes the employee's reactions to the amount and nature of feedback provided by the supervisor.

The online system is designed to facilitate timely and complete reviews [10]. Online personal appraisal systems are also designed to facilitate more efficient reporting for supervisor. The system is expected to be viewed more favorably by employees.

Participation in the performance appraisal

Ideally, performance appraisal is a partnership between an employee and his/her supervisor [16]. Accordingly, one of the most widely researched performance appraisal characteristics is employee participation [17]. There are a variety of ways to include the employee in the evaluation process. It can be execute from informal prompts during the interview in which the employee can contribute to the dialog about his/her performance to a more formal completion of a self-evaluation form. Research supports that the importance performance appraisal systems of employees feeling that they have a role in the evaluation of their own performance [18]. Perceptions of participation are particularly important in organizations that make self-evaluations an option or requirement [19]. Employees who report greater participation in the performance appraisal process also react more positively to the process [20], report more motivation toward improvement, and demonstrate more actual improvement [10]. With the development of Technical Skill Analysis, hopefully employees evaluated with the online system will report higher levels of participation in the performance appraisal process.

CHAPTER 3
METHODOLOGY

3.1 Research Methodology

In order to identify how to improve the process it was necessary to critically analyze current procedures, the research of how the data is collected, and the type of process use and how the information existed will be analyzed in order to identify the best method to develop the system at early stage.

3.1.1 Throw-away Prototyping Methodology

This project will use throwaway prototyping to develop the project. Figure 2 below demonstrate the stages/phases in the methodology that been used. It is important to perform all the stages to make sure all the things that been planned could be accomplish according to the schedule.

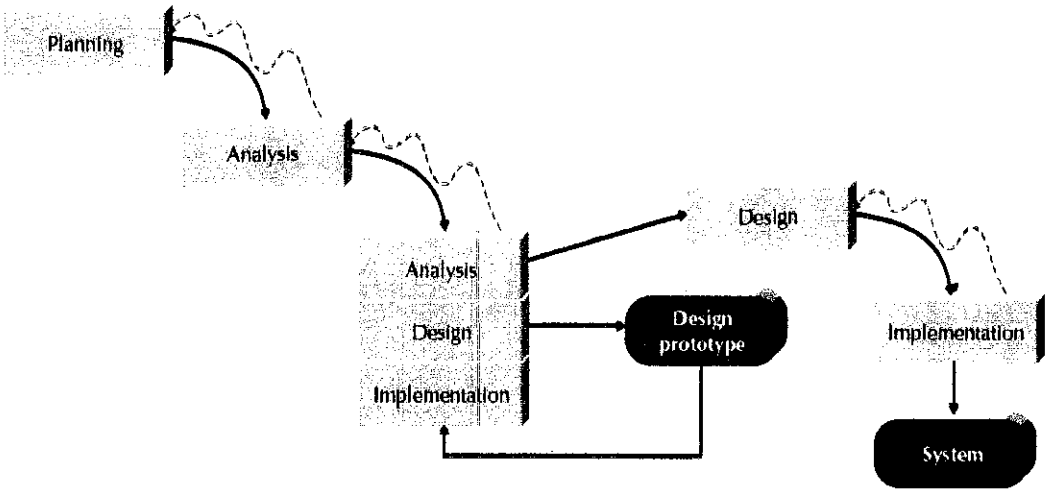

Figure 1: Throw-away Prototyping Diagram

For early stages of the project, it is important to understand the entire concept that involve in the project. In order to provide better understanding, an appropriate planning and analysis will be done. The planning process involving the series of meetings with user to gain the requirements needed to develop the TSA system.

The second stage is to examine contemporary thinking on the reasons for utilizing a performance appraisal system through an extensive literature review. The second considered the requirements of personnel to be reviewed, their organizational role, what knowledge skills and attitudes they should possess to reinforce desired organizational directions. The third and final stage was to identify and consider what options were available to develop and implement this performance appraisal system.

3.1.2 Data Collection

The method of collection of data has been done through several ways such as the discussion and meeting between the supervisor and the subordinates on each department. The purpose of the meeting is to identify what is the desire skills that need to be evaluate and improve in other to evaluate the staff performance. Each of supervisors will then pass the data to the administrator of the Technical Skill Analysis System and the data which contain set of skills from each department will be key-in in system database. Other than that, in order to receive a feedback from staff on the performance of current performance appraisal process, the survey had been done randomly among staff of Regulation Group of Bursa Malaysia. The purpose of the survey is to measure the level of satisfaction and effectiveness of current performance appraisal process and how it can be improve and implement in a new performance appraisal system which is Technical Skill Analysis.

3.1.3 Data Development

In the first stage of data development, the data which contain the details of staff and the set of skills question based on their respective department stored in a system database which is Microsoft Access. To ensure the security and privacy of the data collected, each staff can only view their own information except for all heads, they can view the information of all their subordinates for the purpose of the performance appraisal process. Each staff will receive the username and password provide by the administrator by an email. In addition, to ensure the process of the performance appraisal run smoothly and save time, there is a time period for each staff to do the assessment. Next, in the second stage, all of data and result from the earlier assessment will be collected

and stored in a database before each of head's department evaluate their subordinates for the second level of assessment.

3.1.4 Rating philosophy

Performance appraisal data can also be classified according to whether employees are compared against others or are rated against a standard.

The rating philosophy of the system will be based on comparison against others. Normally, when comparing employees against each other, a few employees end up at the top and a few at the bottom in what is known as a normal distribution curve (also known as "grading by the curve,"). The majority end up somewhere in the middle. Where the staff is ranked depends on how they perform in comparison to others.

The principal advantage of the comparison method is preventing from placing all staff in one category (for example, all superior). Other than that, it can help the supervisor to identify the weaknesses whether in their staff or skills that related with their department.

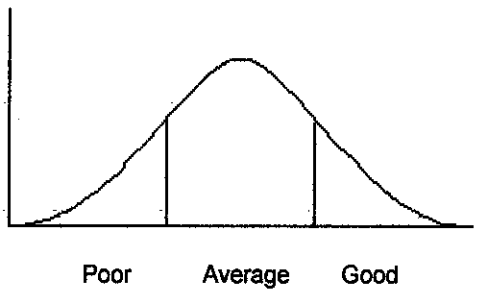

Figure 2: "Grading by the curve" (normal distribution bell curve)

3.1.5 Rating mechanism

There are a number of ways of classifying performance appraisal instruments. In the Technical Skill Analysis system, the data will be presented in terms predetermined anchors. A combination of approaches is necessary to end up with a useful performance appraisal.

Predetermined anchors is a method where appraisals which is supervisor and staff simply check or circle the most appropriate answer can potentially make for more standardized evaluations and more less time consuming. Anchor-based appraisals include rating factors with a numerical scale (e.g., 0 to 3), or an adjective-descriptive scale (e.g., superior, good, below average). For example, in the system, the appraisers need to choose based on adjective-decriptive scale and each scale has the respective value to measure the performance of staff as stated in table below:

Key	Description	Value
F	Fully met	5
S	Substantially met	4
P	Partially met	3
D	Departiallty met	2
N	Not required	1

Table 1: Evaluation Measurement

From the value, it is easier for the administration to come up with an analysis. For example:

Question 1: Knowledge of trading practices and Bursa trading rules

Staff's assessment : F

Head's assessment : D

From the example, we can measure by convert the assessment given by staff to the value of the key which is F=5 and D=2. So, the value of head's assessment will be subtracted with the value of staff's assessment and the final result will be count as 2-5 = -3.

3.1.6 Analysis

After both staff and head completed evaluate their performance, the administrator will analyze the result and come out with final analysis. The analysis from the assessment will come out in a chart or graph to give a clear view on the result. It is also easier for supervisor to identify the skill where need to improve and increase the level of performance among their staff.

3.2 Project Activities: System Development and Implementation

The project adopts four phase process of performance appraisal life cycle which is Phase I: Planning, Phase II: Development and Execution, Phase III: Assessment and Phase IV: Review and Analysis.

The project's methodology is based on Throw-away Prototyping Methodology by concentrating on system prototyping. The methodology enables the system to be demonstrated to the users and they can test the functionalities of the system. As a result, the system can be completed according to the user requirement while the system was being developed without any misconceptions between the developer and the user. It is to ensure the system can meet the standard and management objective to develop effective performance appraisal system.

3.2.1 Phase 1: Planning

During the process of planning, supervisor and employees meet each other and discuss the set of skills that relate with the job. The set of skills is differ from other department and it will based on five major areas which is key accountabilities, objectives, standards, performance factors and the elements of the development plan.

The supervisor and employees have set of standard skills and this standard must be clear, easily to understand and in measureable terms. The appraisal criteria can be change later but the changes must be applicable for all level of employee to avoid problem in the future.

3.2.2 Phase 2: Development and Execution

Development and Execution phase start with the analyzing of user requirements and the problem occurred to develop the system. At the phase, there will be a lot of brain storming and new idea will come out to ensure the development of the system will go smoothly. One of the important factors before the development of the system is create a flow chart because it is easy for the developer to develop the project based on the project flow created.

3.2.3 Phase 3: Assessment

The assessment phase is a process where supervisor and employees will do the evaluation on the Technical Skill Analysis online performance appraisal system. Employees will be given period of time to do their evaluation. Before the assessment process, all supervisors should inform the procedure of performance appraisal to all employees. The standards and process should be clearly explained in order to help them understanding their action and employees know what is expected from them. The process of assessment will execute in two phase which is:

1. Phase I – Employees will perform their self assessment based on the set of skill that have been standardize during the planning phase. The data of the assessment will be sent out to their respective supervisor.

2. Phase II – Supervisor will do the assessment of their subordinate based on the data from the employees self assessment.

3.2.4 Phase 4: Review and Analysis

All the result of the assessment will be audited by the administrative of Technical Skill Analysis system. Each of the data will be filter and massage and the output of the assessment will be in graph and sum of result skill obtained from employee's evaluation process. The result of the appraisal should be discussed within supervisor and employees. From the analysis, the result can be use by supervisor for further action in term of skill improvement program or reward program. It is also can be use to solve the problems faced by employee and later motivate them to perform better.

3.3 Tools

Tools	Purpose
Microsoft Visual Studio	Main platform to develop the system
Microsoft Access	Database software to store the data from the system
Adobe Photoshop	Software to create and design the interface of the system
Microsoft Project	To monitor the progress of the project

Table 2: Tools

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 System Prototype

4.1.1 System Architecture

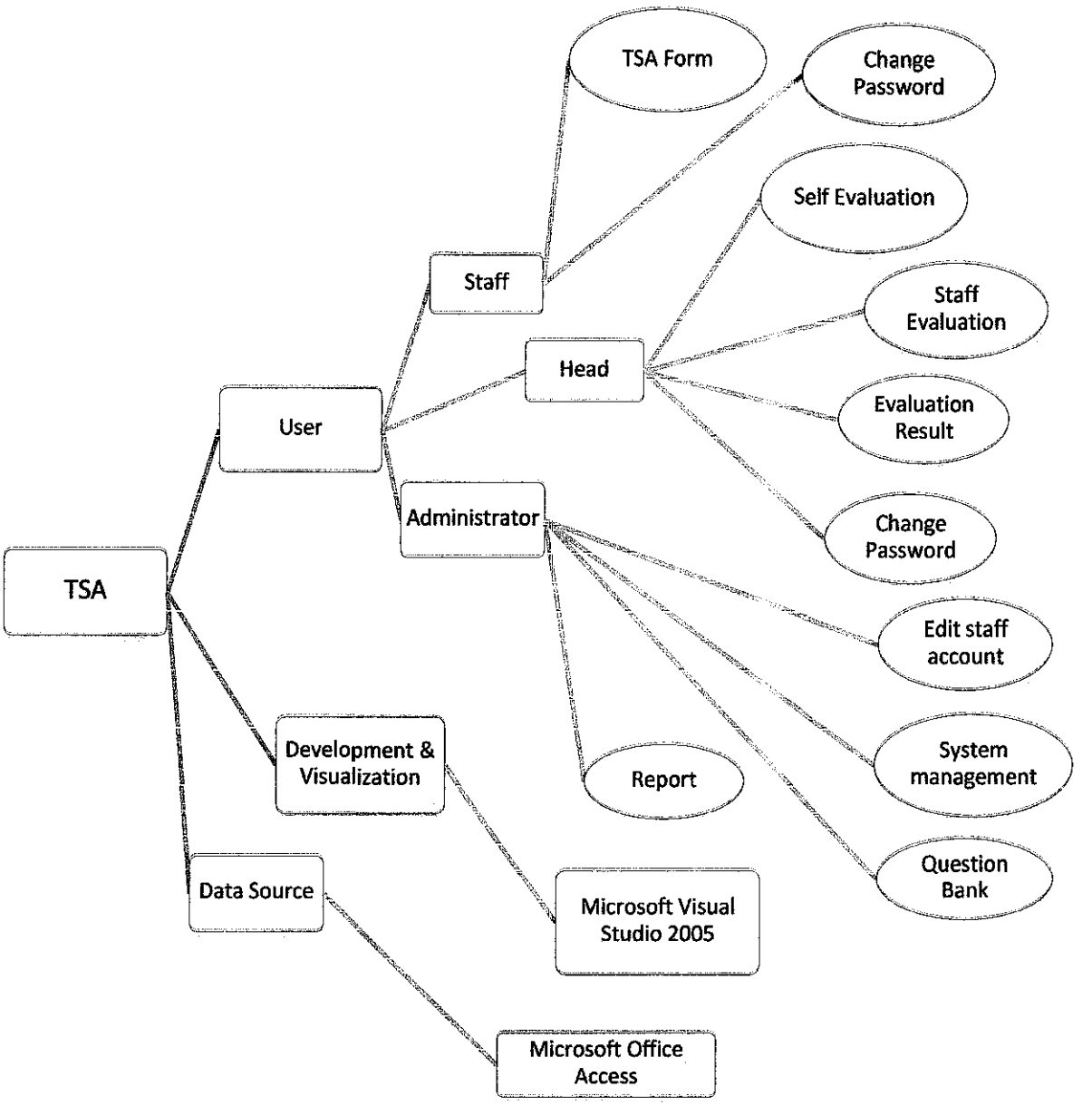

Figure 3: System Archictecture

The user of Technical Skill Analysis (TSA) divided into three module which are:

i) Staff Module
ii) Head Module
iii) Adminstrator Module

All of the modules is differ from each other and has different functionalities with Staff Module has least functionalities compare to Head Module and Administrator Module. To identify which type of user who login the system, system will detect the user based on username which is staff ID.

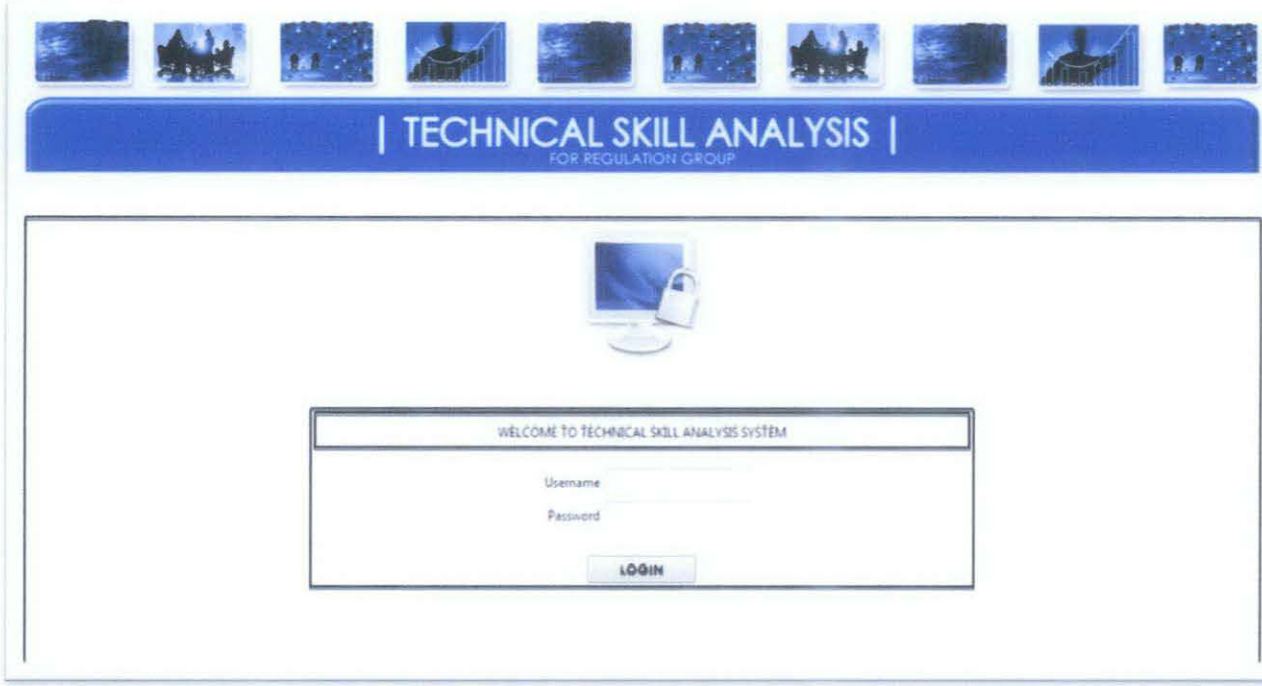

Figure 4: Login Page

When user enter the TSA system, login page will appeared and it is same with all modules whether user want to enter the system as a staff, head or administrator. User need to login the system using the user name and password given by administrator through company email. If user login the system for the first time, user need to change the password based on their preferences and must differ from password given by administrator of TSA to ensure the security and privacy of user.

4.1.2 Staff Module

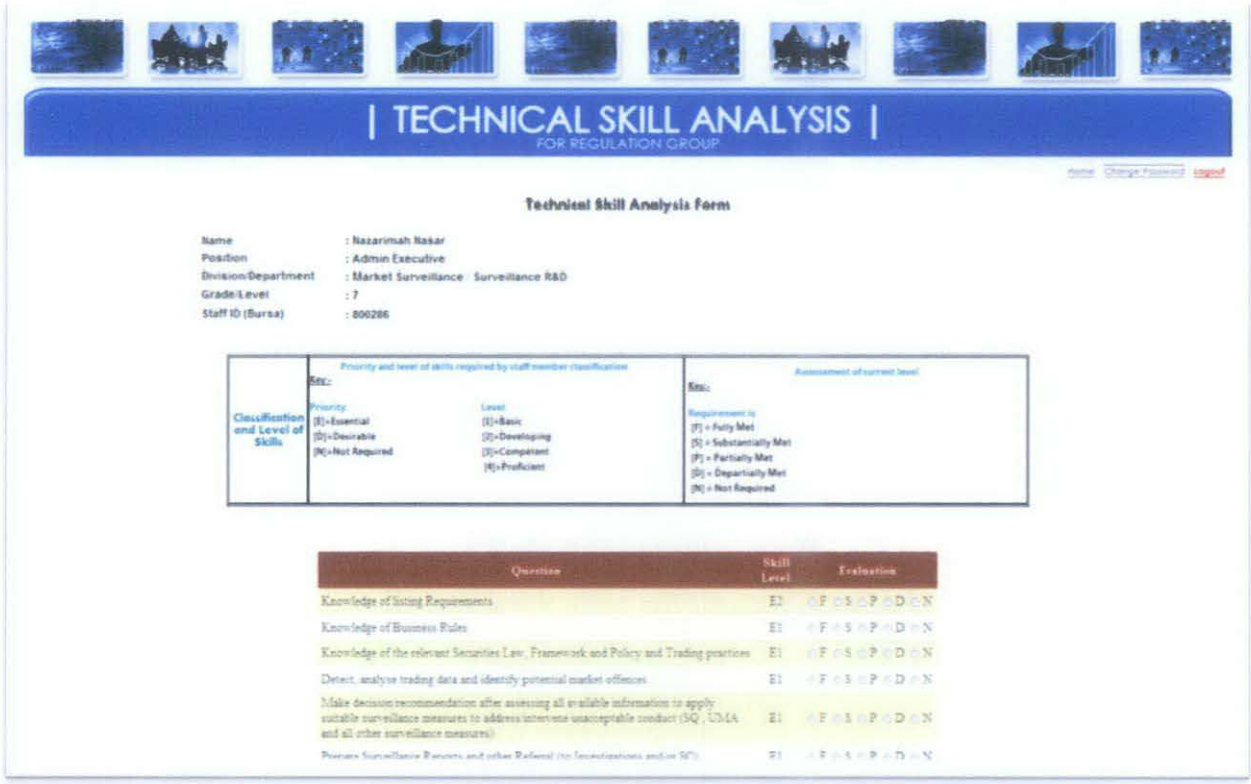

Figure 5 : Staff Module Home Page

When user login the system as a staff, automatically system will come out with TSA evaluation form(*refer Figure 5*) according to the staff ID. All the details about the respective staff will appear such as staff name, position, division/department, grade/level and staff ID. User just need to the evaluation of their skills and after the evalution process complete, user need to click submit button and pop-up message will appear to inform user about the status of submission. Staff module also enable user to change password from time to time and user can view their summary of evaluation process by clicking summary button.

Technical Skill Analysis Form

Name : Arshad Azizi Kamaruddin
Position : Head
Division/Department : Market Surveillance / Surveillance R&D
Grade/Level : 3
Staff ID (Bursa) : 800862

Classification and Level of Skills	Priority and level of skills required by staff member classification Key: Priority: [E]=Essential [D]=Desirable [N]=Not Required Level: [1]=Basic [2]=Developing [3]=Competent [4]=Proficient	Assessement of current level Key:- Requirement is: [F] = Fully Met [S] = Substantially Met [P] = Partially Met [D] = Departially Met [N] = Not Required

Question	Skill Level	Evaluation
Knowledge of listing Requirements	E2	F S P D N
Knowledge of Business Rules	E1	F S P D N
Knowledge of the relevant Securities Law, Framework and Policy and Trading practices	E1	F S P D N
Detect, analyse trading data and identify potential market offences	E1	F S P D N
Make decision/recommendation after assessing all available information to apply suitable surveillance measures to address/intervene unacceptable conduct (SQ , UMA and all other surveillance measures)	E1	F S P D N

Figure 6 : Technical Skill Analysis Form

4.1.3 Head (Supervisor) Module

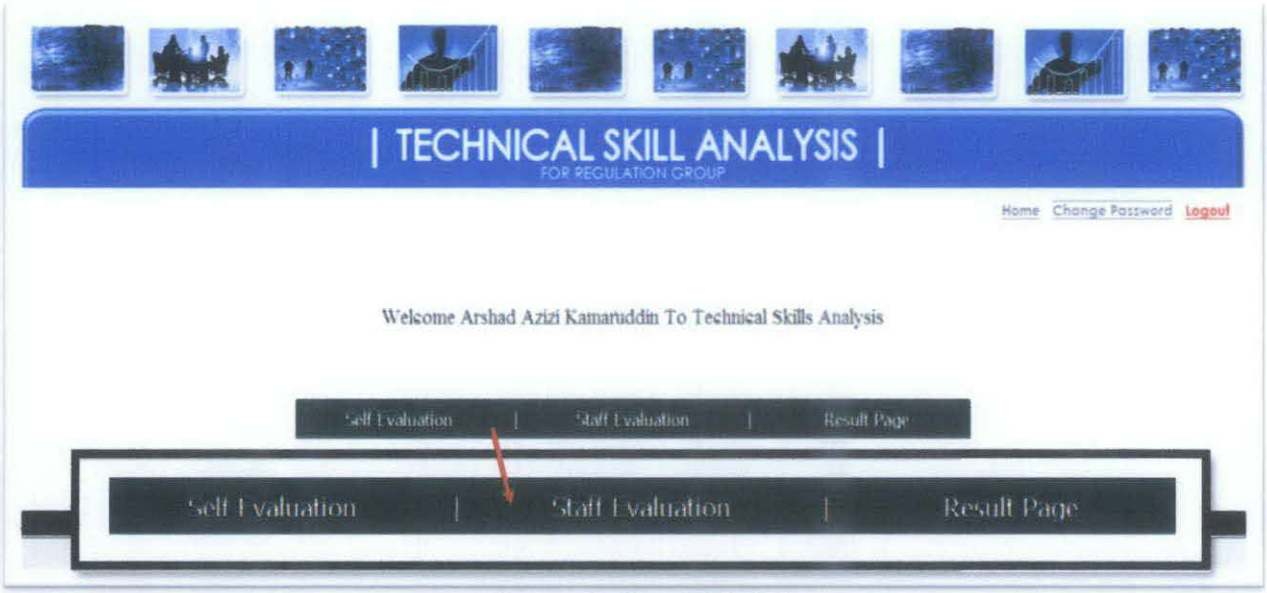

Figure 7 : Head Module

When user login the system as a head(supervisor), there will be three main tabs which is *Self Evaluation*, *Staff Evaluation*, and *Result Page* (*refer Figure 6*). User can choose whether they want to evaluate themselves of evaluate their respective staff. If user click *Self Evaluation* tab, TSA evaluation form will appear same as staff evalation form (refer Figure 2). *Staff evaluation* tab enable user to evaluate their staff. New window will appear(refer figure 3) and contain details about user(head) information. There is also drop down button where user can choose their staff and evaluate them by clicking evaluate button.

User is also enable to view the evaluation result from their staff earlier evalution by clicking *Result Page* and summary, result and graph of the latest evaluation from their selected staff will appear shortly.

4.1.4 Administrator Module

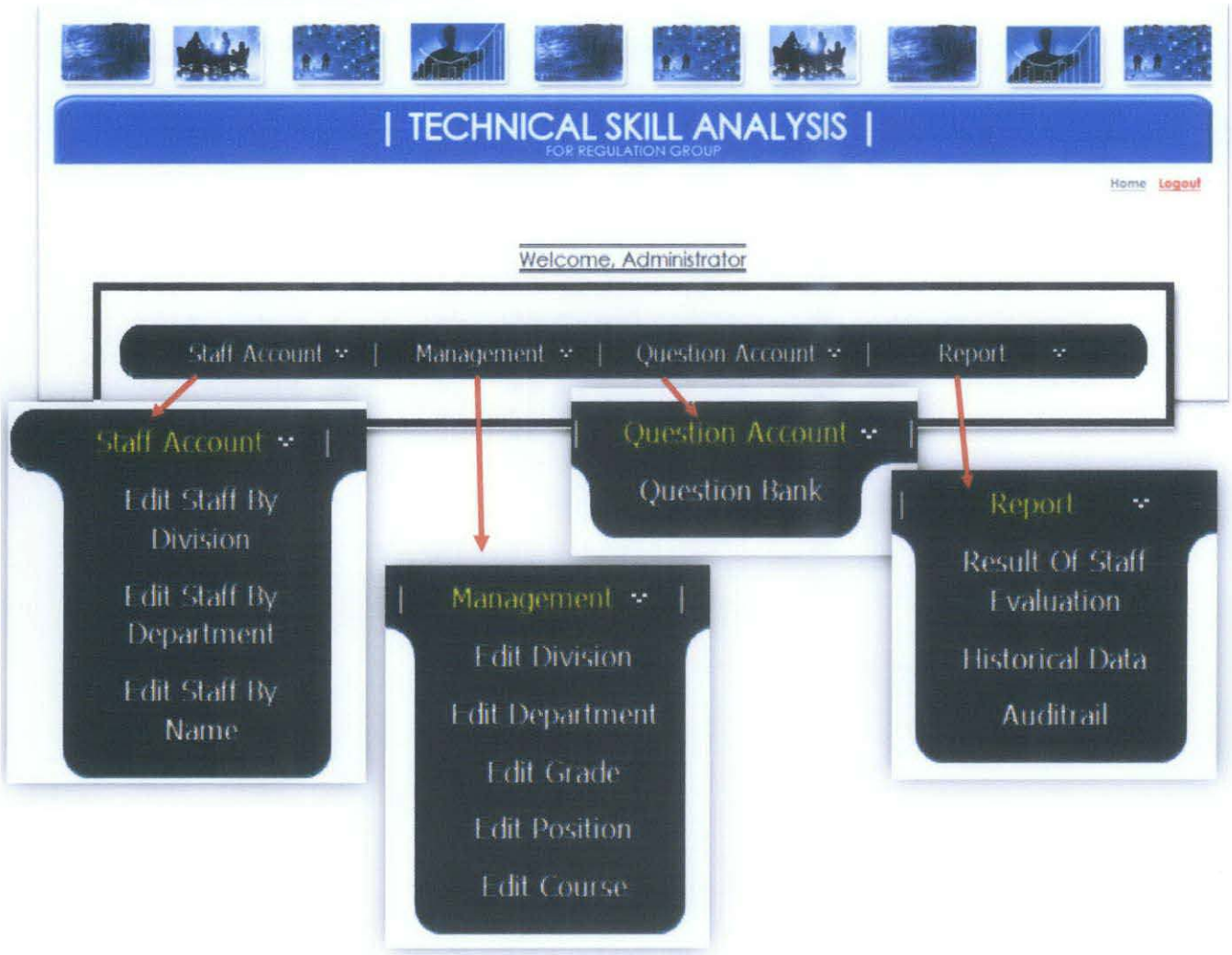

Figure 8: Administrator Module

Administrator module more on management and analysis part of TSA system. There are four main tabs of administrator module which are:

i) *Staff Account*

Staff Account tab contents consist of edit staff by division, by department and by name. With this tab, administrator enable to edit staff name, username, job title, grade, division, department and staff status where it indicates whether staff eligible to use the system or not. There is a function where administrator enables to add staff by clicking Add Staff button of there is new staff joins the group in the future.

Figure 9: Staff Account snapshot

ii) Management

Management tab enable user to manage and edit the head of division and department. It is normal if there are any changes of leader in future so the function is needed in order for administrator to modify these changes

Figure 10: Management snapshot

iii) Question Account

Question Account tab consist of question bank of staff skills which is differ from each department. User enables to add a new question or modify existed question if there is any changes. User can also set a grade for each question based on administration requirement.

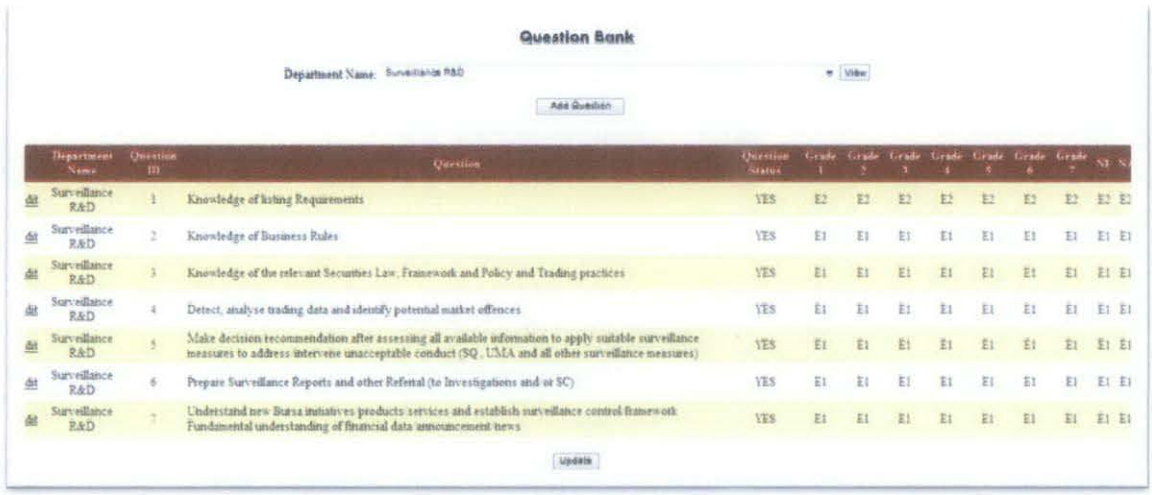

Figure 11: Question Account snapshot

iv) Report

Report tab consist of result of staff evaluation where the result gained will be use to analyze by administrator and come out with an output, historical data where administrator can view the summary of evaluation done by all staff and audit trail where user can monitor the activity of user when they use the system. Audit trail is important as one of the security features of the system.

4.2 Evaluation Analysis Mechanism

Classification and level of skills

i) Priority and level of skills required by staff member classification. Key:

Priority:

[E] : Essential

[D] : Desirable

[N] : Not required

ii) Assessment of current level.

Requirement is:

Key	Value
[F] : Fully Met	**5**
[S] : Substantially Met	**4**
[P] : Partially Met	**3**
[D] : Departially Met	**2**
[N] : Not required	**1**

Table 3: Evaluation Analysis Methodology

STAFF EVALUATION

Staff answer Q1 and evaluate themselves.

Example: Staff evaluate their level of skill for Q1 is Fully Met [F].

So, the value equal to 5.

HEAD (SUPERIOR) EVALUATION

Head evaluate Q1 for their staff which staff has evaluated themselves earlier.

Example: Head evalute Q1 for their staff with Partially Met[P].

So, the value equal to 3.

OUTPUT

Value from head's evaluation will be substracted with value from staff's evalution.

Example: Head Evaluation = 3

Staff Evaluation = 5

Result = 3-5 = -2

Figure 12: Evaluation analysis methodology diagram I

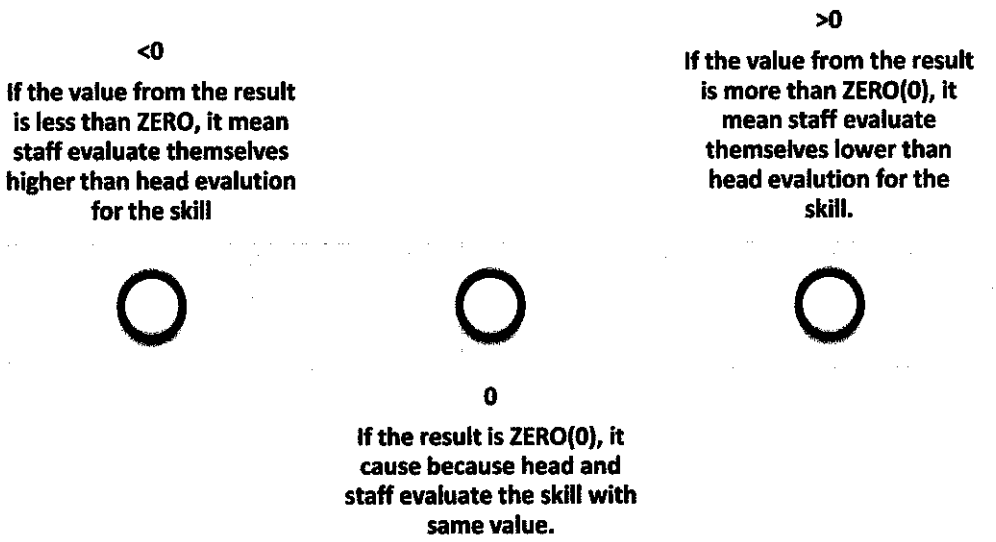

Figure 13 : Evaluation analysis methodology diagram II

Value	Description	Consequences
<0	The value indicates that employee feel they have a good skill but their head think otherwise.	The higher the negative number, it mean the employee have a problem about their skill and need to undergo training or extra focus from superior
>0	The value indicates that employee feel they are not good about the skill but their head think otherwise.	The higher the positive number, it mean the employee have a problem regarding their self confidence and self esteem. They actually good and skillfully but prefer to think otherwise. To solve the problem, this type of employee needs to undergo motivation training to boost their self confidence and motivation.

0	The value indicates that staff and head are agreed and think in same direction regarding the skill. But, we must consider the value of ZERO(0) appeared because of certain conditions which are: i) The value from both head and staff is same but in POSITIVE manner. Example: The value is ZERO because both head and staff evaluate the skill with Fully Met [5]. ii) The value from both head and staff is same but in NEGATIVE manner. Example: The value is ZERO because both head and staff evaluate the skill with Departially Met [2].	If the result is in positive manner, that mean there is no problem for staff regarding the skill. But if the result negative manner, staff need to undergo training because their head and staff itself feel that they are not good for the skill.

Table 4: Value Description

4.3 User feedback

To gain a feedback on current process and implementation of Technical Skills Analysis system, some survey had been done among randomly selected staff of Regulation Group from various departments. This survey obtained after they use the system during user testing process. Set of question asked related on the process of current system and the level of satisfaction from user who is using the system. From the result, we can obtain their reaction about the system and improvement can be executed for the better system. Rating scale is set from 1 to 4 with 1 is strongly dissatisfy (lowest) and 4 indicates strongly satisfy (highest) while N/A for questions that are not applicable. The question asked as stated below:

Pre-Survey:

1) How much do you know about Technical Skills Analysis (TSA) system?

   a. Almost nothing b. Somewhat c. A few things d. A great deal

   Result: Out of 20 respondents, 100 percent of the respondents know about the new system implement for this performance appraisal process. 65 percent of them choose 'A great deal' as their answer and the rest answered 'A few things". It shows the development of the system create high awareness among staff who need a better system which expected to improve the current performance appraisal process.

2) What are your expectations of the new Technical Skills Analysis (TSA) system?

   a. *The TSA system will improve productivity and efficiency starting on day one.*

   b. The TSA system will improve productivity and efficiency over time as the practice becomes accustomed to using it.

   c. The TSA system is just a replacement for traditional paper-based performance appraisal method

   d. The TSA system is unlikely to improve productivity and efficiency.

For the expectations with implementation of TSA, about 80 percent give a good expectation about the effect of the system with 70 percent of respondent expected that TSA will improve productivity and efficiency over time as the practice becomes accustomed to using it and the other 10 percent respondent who give good responses expected TSA will improve productivity and efficiency starting on day one. Remaining 20 percent respondent choose to think otherwise with all of them answered TSA is just a replacement for traditional paper-based performance appraisal method.

System Survey:

1) Satisfied with the instructions given through Groupwise email about the process to perform performance appraisal using TSA system

   Result: This question more focuses on administrative part on how administration of TSA disseminates information to users on how to use the new system. Out of 20 respondents, 15 percent strongly satisfy, 65 percent satisfy and 20 percent dissatisfy. From the result, we can conclude that most respondents satisfy with the technical process from the administration regarding the instructions given to use the system.

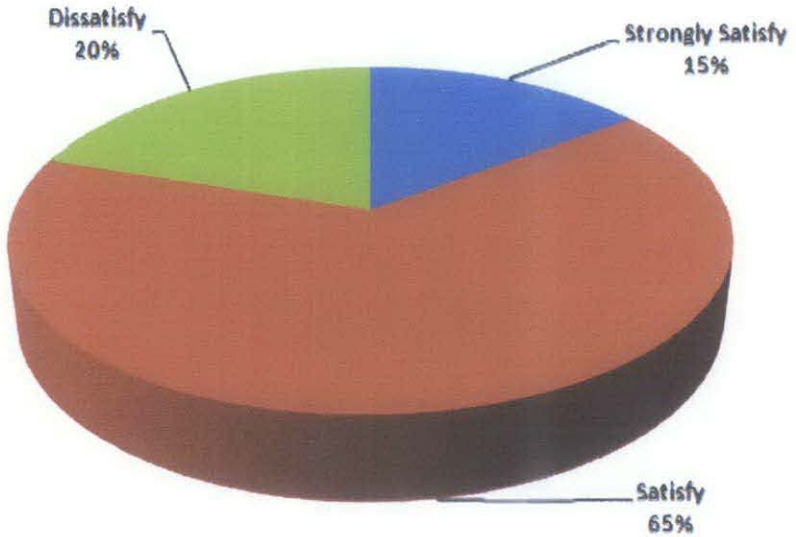

Figure 14 : Survey Pie Chart I

2) Satisfied with the overall quality of TSA system design.

Result: Out of 20 respondents, 35 percent strongly satisfy and 65 percent satisfy with the current system's design which is simple and neat for them to understand and using the system.

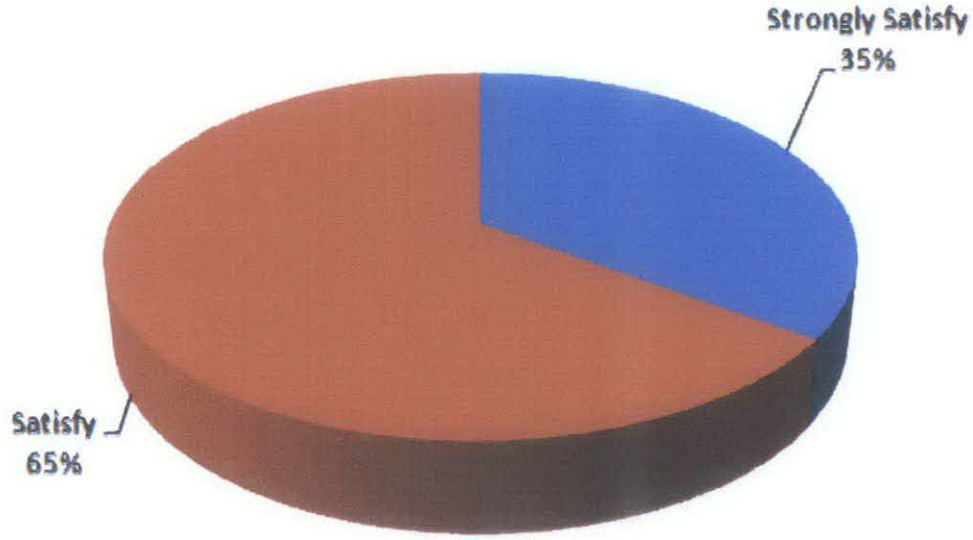

Figure 15 : Survey Pie Chart II

3) Satisfied with the time required of TSA system to generate the result for assessment (consume less time more than 50 percent).

Result: Out of 20 respondents, 45 percent strongly satisfy and 55 percent satisfy with the time required of TSA system to generate the result for assessment. They believed that with TSA, the system enable to generate the assessment result quickly and meet the objective of TSA which is consume less time more than 50 percent. It is because when staff and head successfully completed the assessment, administrator can process the result and the system will automatically generate an output for staff's assessment result.

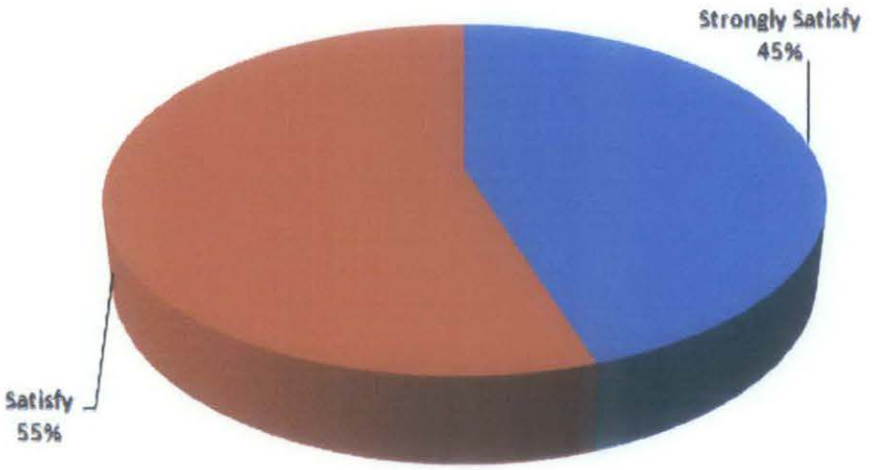

Figure 16 : Survey Pie Chart III

4) Satisfied with the security of TSA system.

Result: Out of 20 respondents, 25 percent strongly satisfy and 65 percent satisfy with the security of the system. Good expectation received for security part because each of staff will receive different password and for the system security, every time user login, administration can track the activity of user. As a result, user feels more safety because they know their privacy is protected. Rest of respondent have a doubt about the process of analyzing their result so they decided to dissatisfy with the security.

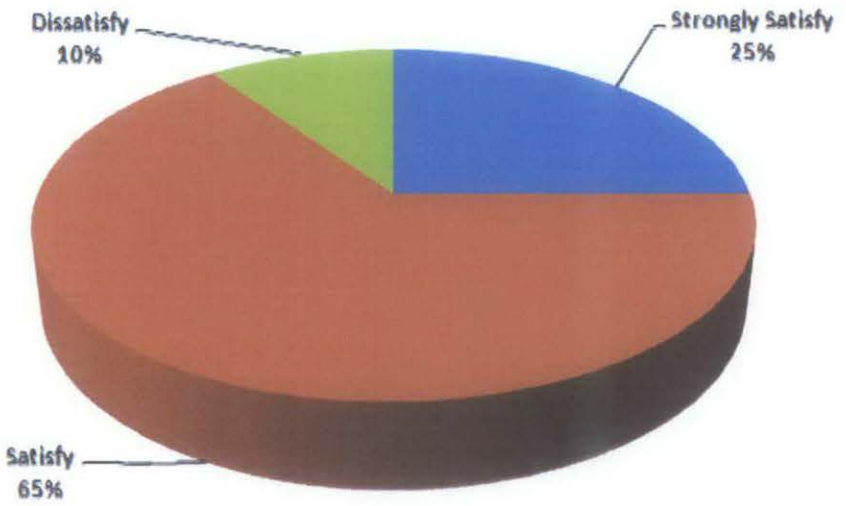

Figure 17 : Survey Pie Chart IV

5) Satisfied with the flow to complete the process of performance appraisal using TSA system.

   Result: Out of 20 respondents, 10 percent strongly satisfy and 65 percent satisfy with the flow to complete the process of performance appraisal. Rest of them answered dissatisfies with the flow which is quite high percentage. We noticed that it may cause from the different level of computer skills among users. As a suggestion, we will conduct extra time with users who have low computer skills in order for them to understand about the system well.

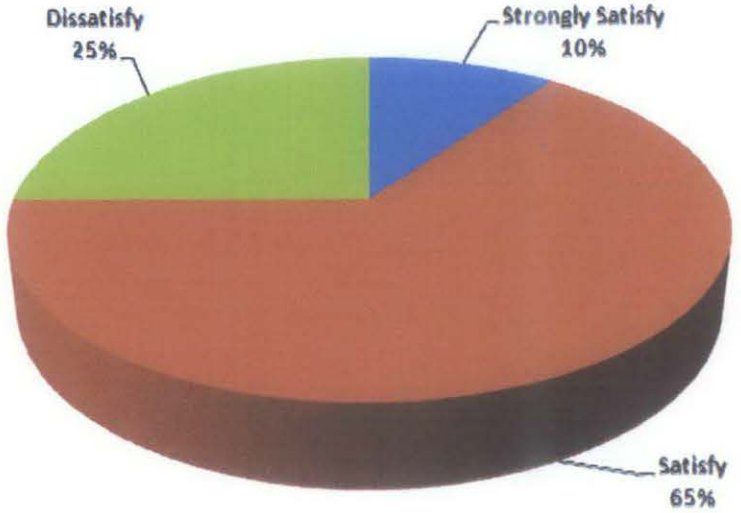

Figure 18 : Survey Pie Chart V

6) How would you rate Technical Skill Analysis (TSA) in general?

Result: Out of 20 respondents, 30 percent strongly satisfy, 60 percent satisfy, 10 percent dissatisfy. With the feedback, we can conclude about most of user satisfy with the new system. However, there is a need for the developer to improve some weaknesses especially in analysis part to ensure the process of performance appraisal can improve from time to time.

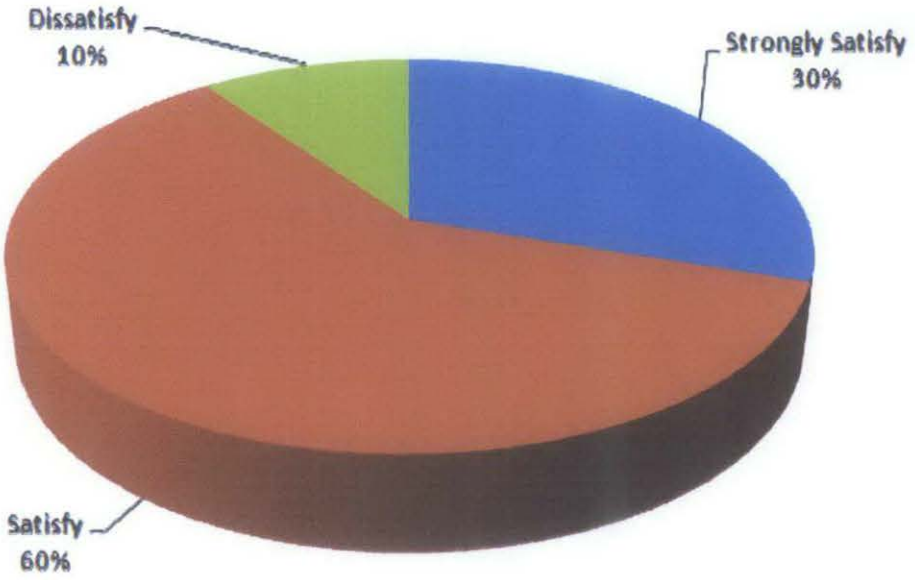

Figure 19 : Survey Pie Chart VI

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this system it to enhance the performance appraisal process from the current process to online web based application named Technical Skill Analysis. The implementation of the system is limited to employees in one organization and one business unit group which is Regulation Group of Bursa Malaysia Berhad. This is the first online performance appraisal system that will be developing in Bursa Malaysia in order to increase the effectiveness during the evaluation process. The output and result from the entire system is hopefully to help supervisor evaluate their subordinate level of skills effectively from time to time. With the implementation of the system, it is hopefully can increase the time of decision making process by 50 percent faster compare with the current process.

The scope of the set of skills in the system for the time being only related with the skills that related with the department task. For the future, it is good to have a set of skills that include the question related with individual behavior and attitude. It can help organization to identify the certain aspect which cannot be identifying on the current evaluation question.

For the future, the system needs to have its own server to ensure the system will run smoothly and increase the security of the system. For current server, the system will be implementing in existing computer available at Bursa Malaysia, which is shared with other implemented system.

There is some area which can be expanded and make continuation from the development of the system. As stated before, the system will be implementing only on Regulation Group of Bursa Malaysia staff. In the future, it is hopefully that the system can be use by all staff in the organization but it need more plan and discussion to ensure the process of performance appraisal is successful.

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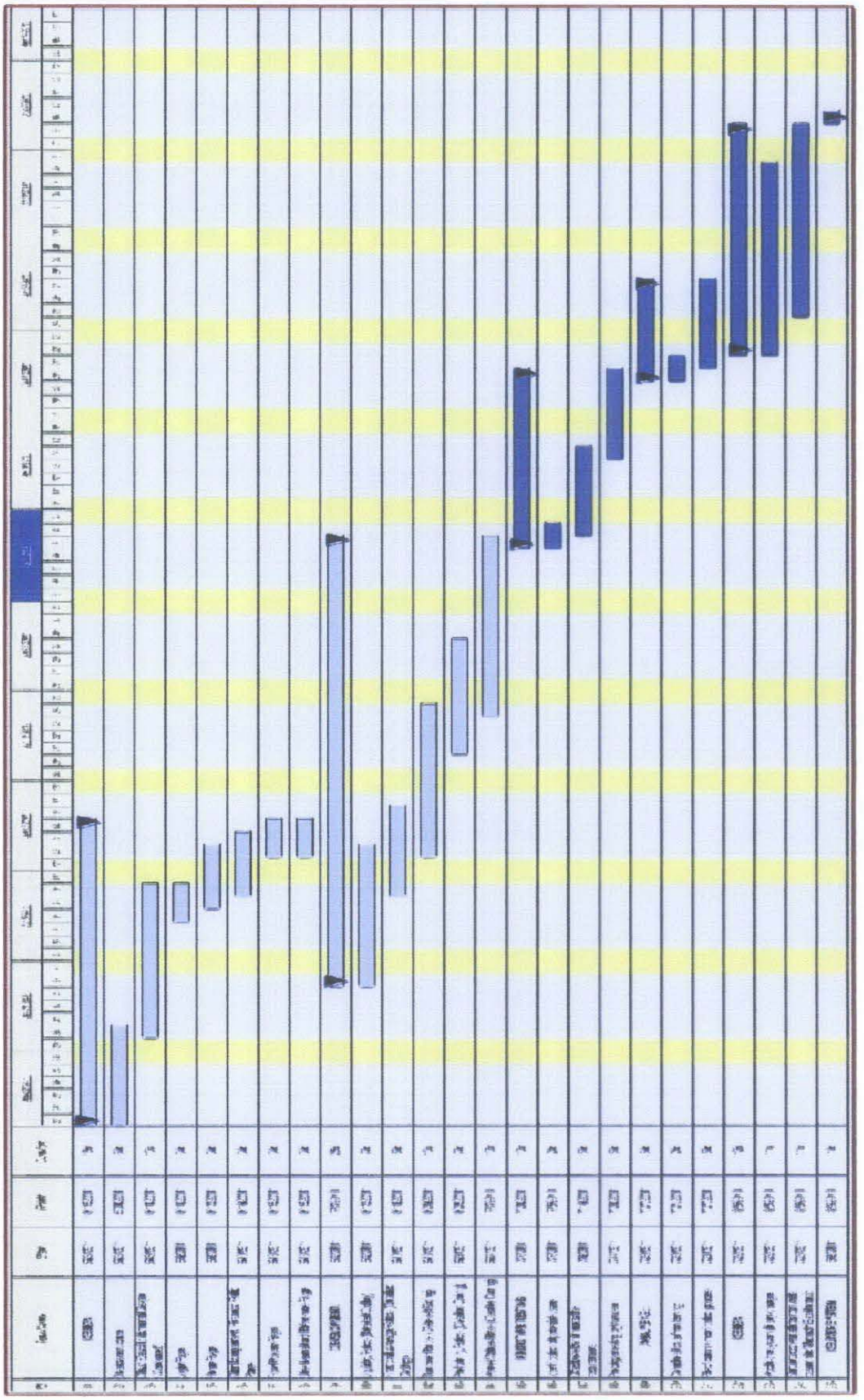
Appendix 1 : Gantt Chart for Technical Skill Analysis

No	Activities	Months								
		FYP I					FYP II			
		Jan	Feb	Mar	Apr	May	Sep	Okt	Nov	Dec
1	**Planning**									
	Choose topic									
	Preliminary research on topic									
	Specify scope									
	Feasibility analysis									
2	**Analysis**									
	Understanding concepts									
3	**Design**									
	Diagram Design									
	Flow Chart									
	Prototype Design									
4	**Development**									
	Data Extraction									
	Integration data (Database structure)									
	Functionalities									
5	**Testing**									
	Unit Testing									
	Integration Testing									
	Process Testing									
	Acceptance Testing									

Appendix 2 : Detail Gantt Chart for Technical Skill Analysis



Appendix 3: Bursa Malaysia's Regulation Group Organization Structure