



UNIVERSITI
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**Universiti Teknologi PETRONAS
(UTP)**

**Stationery Management System
(General Administration System)**

BY

MUHAMMAD ARIFF BIN MOHD DAHALAN
13668

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

SEPTEMBER 2013

Universiti Teknologi PETRONAS
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CERTIFICATION OF APPROVAL

Universiti Teknologi PETRONAS (UTP)

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Approved by,

.....
(Dr Shuib b Basri)

UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

September 2013

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 the acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

.....
MUHAMMAD ARIFF BIN MOHD DAHALAN

ABSTRACT

The main focus for this study is to develop the Universiti Teknologi PETRONAS (UTP) Stationery Management System (SMS), in order to improve from the current manual process. The purpose of enhancement from the current process into a new system is to improve the efficiency and the effectiveness of the system. The inefficiency of the process can be identified as no record on spending/requisition, manual process as the source of delay and inventory issues. Online requisition system has been applied widely by many organizations especially in this era. The benefits that make it convenient are like reducing the usage of paper, online approval, easy online entry and shorten the time taken. Qualitative study will be adopted in order to complete the study. Qualitative study includes interview and research on the papers that have been done previously. It is to understand the concept and practice of current Stationery Management process. In addition, it also important to identify the drawbacks of current process thus gathers the user requirements for the new system.

As a result, it is found that some additional features will be included in the new system in order to cater the possible issues as well as enhance the current process such as email notification and tracing progress of request. It is also to make the system more convenient and user friendly. It is hope that the system could improve the efficiency and effectiveness of performing Administration tasks in UTP.

ACKNOWLEDGEMENTS

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Million thank also I wish to Human Resource & Administration department staffs especially to En Mohd Zuhri b Zainudin, En Aminur Rashid b M Shari'ai and En Azahari b Awaluddin because they also help me in completing my project here. They always give me ideas and comments on my task and also my project so that I can improve my project in many ways.

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CHAPTER 1: INTRODUCTION

1.1 Background

Universiti Teknologi PETRONAS or UTP was founded in 1997 and located in Bandar Sri Iskandar, Perak with the population of almost 7000 students a year. In order to realize the vision of to be a Leader in Technology Education and Centre for Creativity and Innovation, UTP administration separated into two major functions which are Academics and Management. In Academics line, there are 3 main faculties which are Faculty of Engineering, Faculty of Geosciences & Petroleum Engineering and Faculty of Science & Information Technology. Meanwhile, in Management line consists of Human Resource & Administration, Student Support Services, Finance & Asset Management, Corporate Services and others.

The current Administration process has not been continuously enhanced to reflect the ever changing business environment that applying the technology in all the process. It is because most of the processes manage by them such as F&B Requisition and Stationery Management being performs manually through paper based form. Now, the UTP Human Resource Management & Administration Department plan to have paperless system that everything related to Administration task will be changed to a system that would be ease both parties, the requestor and the Administration themselves.

In order to realise the UTP Human Resource Management & Administration Department objective, they planned to have a system called the General Administration System. The General Administration System function is a system which inclusive of F&B Requisition System, Stationery's Management System, and Mail Management System. In this project, it will mainly focusing Stationery's Management System that includes requesting stationery online from the staff through the intranet. It does also involve the inventory and tracking record.

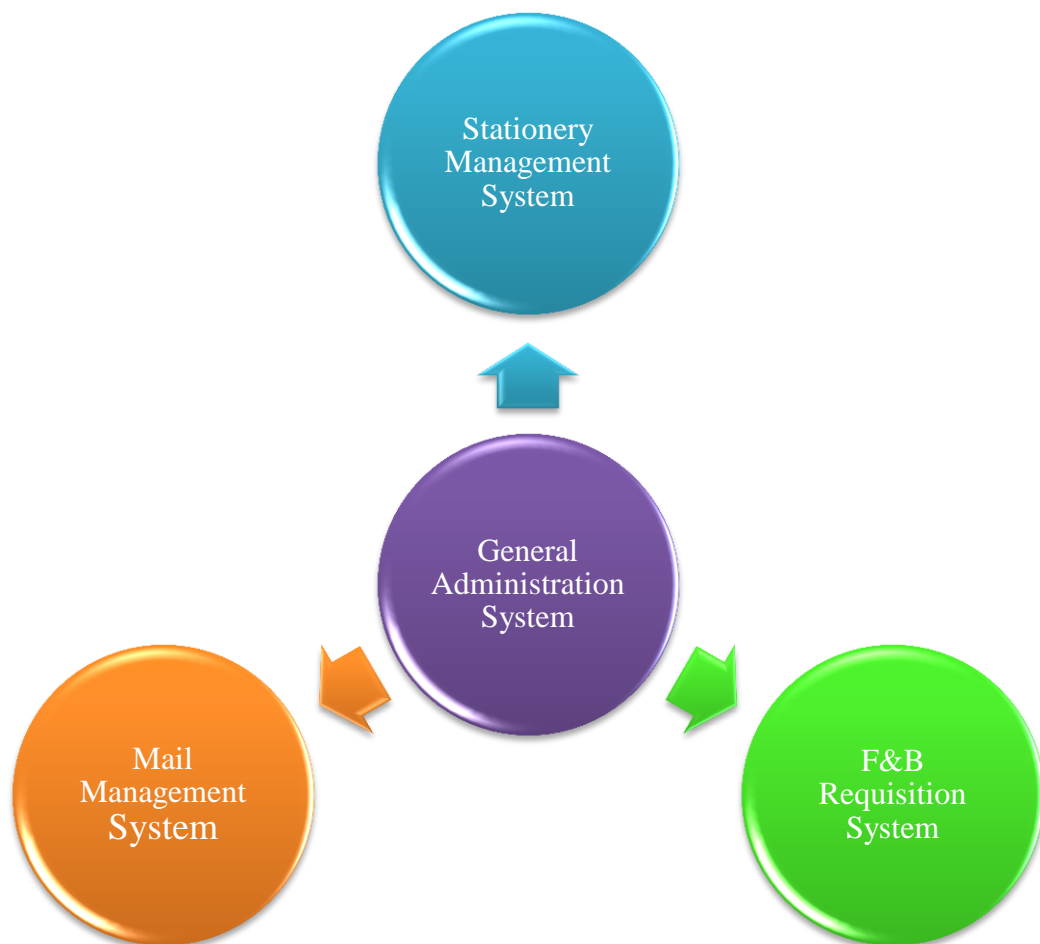


Figure 1: General Administration System

As an example there could be situation where the stock of the item may be more and sometimes the supply of few items may be less than required. This system will thus help in minimising the excess stock and in the meantime look into creating reports to give the top management view the records for the good of the organization.

1.2 Problem Statements

Based on the interview outcome with the staff of Human Resource and Administration department, it is found that the process of managing the Stationery for the usage of UTP's staff was not efficient. A few issues that signify the inefficiency of the process listed as below:

- There is no record on spending on stationery by each department

Until now there are no reports that can give a details information about the spending on departmental basis. This could easier the Administration to provide the expenditure details to the top management.

- The manual process is a source of delay whenever users misplace the documents.

The requisition form that submitted in hardcopy could be misplaced. As a result, the process need to be repeated because the details is incomplete if do not consist of enough approval especially to the item that required more approval.

- There is a workload to Administration in managing the inventories.

As there are no systems that can properly manage their inventories, they need to check it manually in the store to get the exact numbers of their stationery's stock. In fact, they are also might be miscalculate them as they do not know when is exactly they need to get a new supply because they do not get any alert unless they check manually the stock. Apart of this, they also have other work that need to focus on.

1.3 Objective of Study:

The objective of this project is to develop the Stationery Management System that will address the issues faced by UTP Human Resources Management & Administration employees when dealing with requesting, approving and managing inventories for the stationeries. It was reported that they required a system that able to manage the inventories and also the requisition process for the stationeries.

Specifically, the project objectives are:

- To study the current process and practice of the Stationery Management applied by the Human Resources Management & Administration Department
- To design and propose an enhance process that addresses the challenges
- To develop a Stationery Management System based on the requirement given by the Human Resources Management & Administration Department

1.4 Scope of Study:

This study focuses on Stationery's Management System. It will mainly about the online requisition for stationery by the UTP staff. Normally, Admin Assistant from each department will submit the form filled by the lecturers or staff to the UTP Human Resource Management & Administration personnel to process their request of stationery.

Requirement study has been carried out to get the requirement of the system. Basically, it does also involve the inventory, and tracking record. This could ease both parties of Requestor and the Administrator to request and manage stationeries in more efficient.

1.5 Feasibility of the Project within the Scope and Time Frame

Within the time frame during the Final Year Project 1 and 2, Stationery Management System project is can be achievable and relevant because:

- If the project duration is longer than the 2 semesters, the author will not be able to learn and experience the full process of developing a new procedure and process.
- If the project duration is too short, the author will have limited opportunity to apply what the author has learned in the whole years of study.
- Upon the graduation, the author will study and observe to what extend the project was implemented and how differently it was implemented. This allows the author to experience how theory is implemented in practice.

1.6 The Relevancy towards Universiti Teknologi PETRONAS

- Bring direct impact in terms of value addition towards improving the procurement process
- The estimation cost of the project is a reasonable and brings no harm towards UTP operational capabilities
- Management will have more accurate information on committed expenses
- Saving more time in procurement system thus make the business more effective

CHAPTER 2: LITERATURE REVIEW AND/OR THEORY

2.1 Definition of Efficiency

As refer to Investopedia, efficiency is a level of performance that describes a process that uses the minimal inputs to create the maximum outputs. Efficiency involves the use of all inputs in generating the output, inclusive of time and energy. Time, money and raw materials are limited, so it is important to retain an acceptable level of output or a general production level, (Efficiency). Meanwhile, according to Dictionary.com, it also define as an accomplishment of or ability to accomplish a job with a minimal usage of time and effort, (Efficiency) .

2.2 Improve Efficiency through Technology

Through technology, processing of data and information retrieval can be done faster and easier, (Dragon). It can be done through applying taxonomy to the data input. In some cases, applying of technology to complete a task may eliminate the possibility of manual errors thus reduce the time taken, (Dragon). In fact, technology may also increase the efficiency through reducing irrelevant bureaucracy of a process by capturing only relevant and useful information, (Increase efficiency to maximise your profit).

Manual Process	Automated/Computerized Process
Less cost effective and efficient	Cost effective and efficient
Low accuracy	High accuracy
Long-time taken	Short time taken
Prone to human errors	Reduce the human errors
Waste of paper	Reduce of paper usage

Table 1: Comparison between Manual Process and Automated/Computerized Process

2.3 Online Procurement

A Stationery Management System in business requires that each purchase be documented and assigned a purchase order number before the purchase is made or paid for. One of the objectives of a Stationery Management System is to ensure all purchases are approved and documented. A Stationery Management System has distinct advantages for business. Every purchase is assigned a unique number so that the transaction can be traced through the system (James).

A basic Stationery Management System allows for the electronic processing of requisition, the records of inventories of those stationeries received as well as the tracing the payment records to the supplier. A Supplier list, along with corresponding Item catalogues and system defaults, allow the Requestor to quickly fill out line-item entries on Requisition Form with single clicks reducing their time spent and eliminating input errors, (Elements of a good Purchase Order System).

Another advantage of having an electronic Stationery Management System is the ability to efficiently generate reports. One example would be allowing management to quickly view spending for a certain period by various departments. Stationery Management System provide advantages including speeding up the order transmission process, lessening errors and retaining a clear log of when orders were sent and what they contained, (Best Practices in E-Procurement: Reducing Costs and Increasing Value through Online Buying, 2005).

Based on the statements and articles above, these are the benefits that could be gain in performing online procurement:

1. Enhancing purchasing processes by providing a minimal cost to manage and control the organization's requisitioning, approval and ordering processes (Trkman & McCormack, 2010).
2. Avoid delayed and error-prone manual management processes that result in poor visibility, lack of process control, and wasted opportunities for leveraging corporate expenditure (Radich, 2012).
3. Focus on the main elements of stationery management system – shortening time to manage inventories, increasing compliancy on budget and improving the organization's competitiveness through more efficient purchasing (Elements of a good Purchase Order System).
4. Rely on best practices application to provide ease of use, a high level of automation and an overall agreement with policies and current practices (Best Practices in E-Procurement: Reducing Costs and Increasing Value through Online Buying, 2005).
5. Audit trail functionality documents the entire process (Nunn, 2009).
6. Catalogue-based purchasing enables you to optimally leverage contracts. It also provides your organization with full control over the quality of the product information (From Paper to Procurement: Effective Catalogue Creation And Management For Buyers And Suppliers, 2004).

CHAPTER 3: METHODOLOGY/PROJECT WORK

3.1 Methodology:

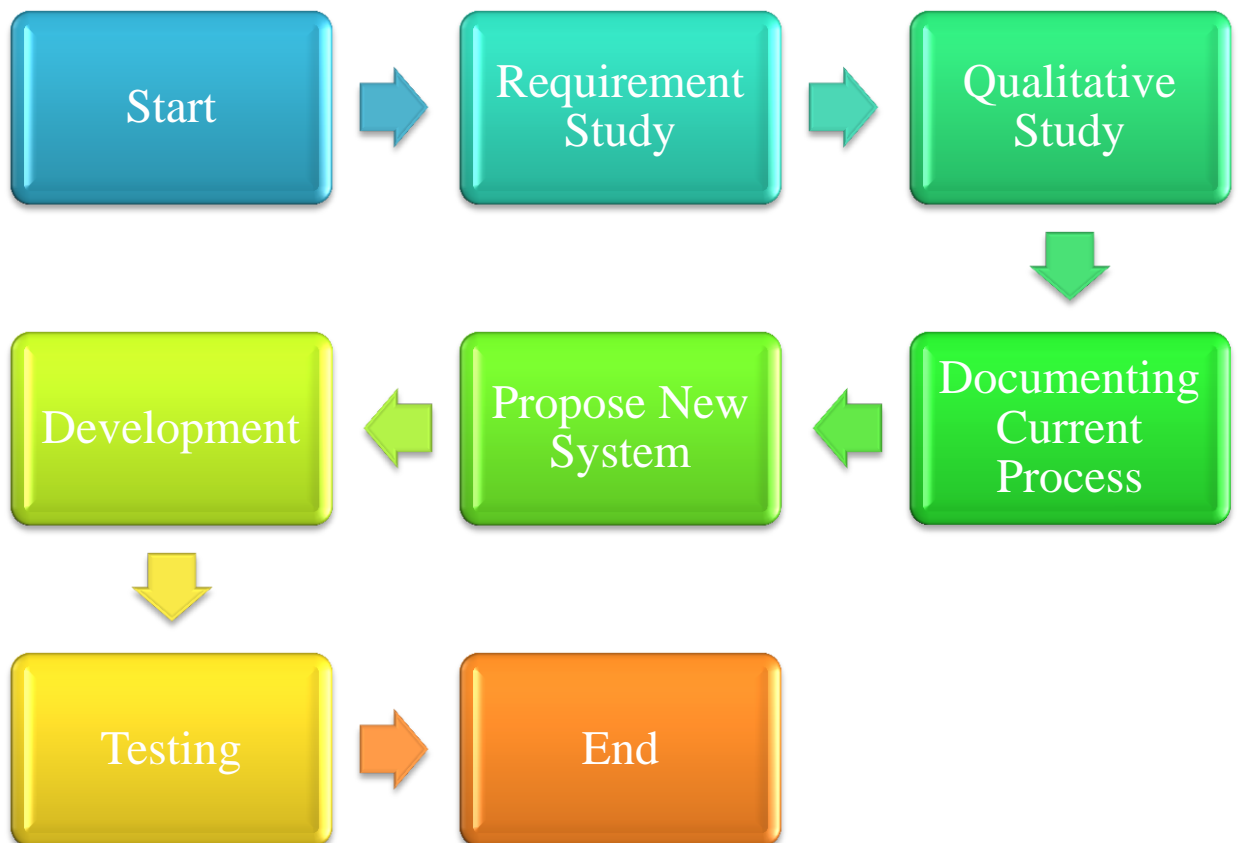


Figure 2: Stationery Management System Study Process Model

This study will use several methods in order to perform the analysis. The methods that will be used are:

- Research on past journals, reports and research that have been done previously on related topic.
- Interviews to gather the data about the current system and the enhancement needed for the new system. It will be done among the UTP staffs especially to the key users.

3.2 Product Development Phases

This project is focusing on developing an online system that can be used by all the UTP staffs through intranet. It has been proposed that the system that will be developed is a web based. These are several steps that will be taken during this phases. The steps are:

- 1) Analysis on the Website Requirements.
- 2) Structure of the Website and the Contents Involved.
- 3) Website Development Phase.
- 4) User Acceptance Testing.

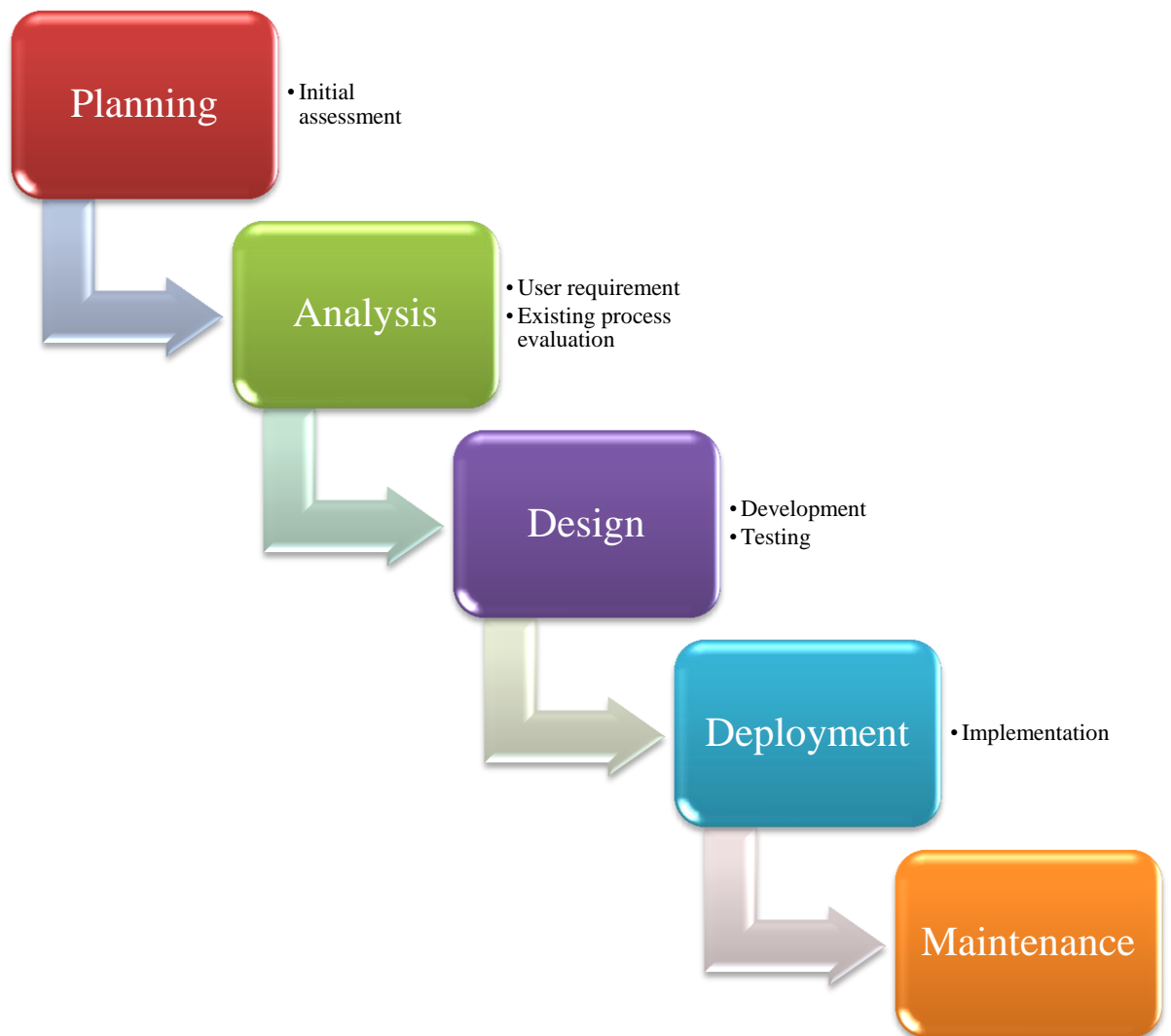


Figure 3: Stationery Management System Life Cycle Model, Waterfall Model

3.3 Project Activities

Steps	Activities
Planning	<p>An interview with the experts</p> <p>a) Interviewed En Azahari B Awaluddin in Chancellor Complex</p> <ul style="list-style-type: none"> ➤ To understand the current practice of Stationery Management ➤ To identify the drawbacks of current process ➤ To gather the system requirements
Analysis	Analyse the data from conducted interview with the experts in managing stationeries from critical and user point of view.

Design	<ul style="list-style-type: none">➤ To develop/create/build a system for managing stationeries based on the design requirements.➤ To evaluate/test the system interface in terms of its usability
Deployment	<ul style="list-style-type: none">➤ Execution of the system development➤ To evaluate/test again the system development in terms of its usability

Table 2: Project Activities in SDLC

3.3 Methods of Data Collection

There are several methods that will be used to gather the data. The methods are listed below:

a) Interview with key user

Several discussions with En Azahari, Administration Department have been done to get his comments regarding the current process of the system. It is also to get his suggestion to improve and enhance the process into the system. The results of the discussions are there are certain fields in the system is not user friendly that need to be improve and ensure the purchasing process is efficient.

b) Analysing and documenting current process

Current flow of stationery management process was documented to analyse understand the existing purchasing process. The flow chart is also need to identify areas of improvement that can be incorporated into the proposed process.

c) Propose a new process flow for Stationery Management System

A new system workflow with additional features is then proposed incorporating the findings from the earlier fact finding and analysing processes.

d) Specifying the system’s functional specs

The Stationery Management System functional specification was made which clarify and specify the function for each option in the new proposed system. It is also stated clearly the roles and responsibilities of each users in the systems (Requestor, Administrator, and Approver.). The purpose of this section is to prepare a system functional specification for the requisition system. Essentially this portion transforms the proposed new stationery management process into a form that can be used to develop a new system to replace the existing stationery management process.

3.4 Development Tools

There are several tools that will be used in this study.

- Web Development Tools – Notepad++, MySQL, Apache webserver, webserver8
- Programming Language – PHP, JavaScript

3.5 Key Milestone:

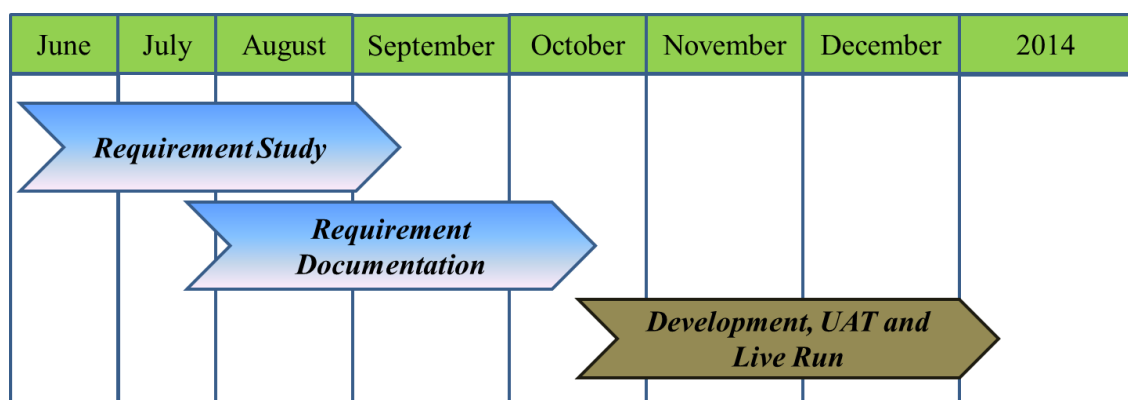


Table 3: Key Milestone

3.6 Gantt-Chart:

No	Project Activities	Weeks													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Selection of Project Topic	█	█												
2	Submit Project Title Proposal			█											
3	Proposal Approval				█										
4	Assignment of Supervisor				█										
5	Submission of Extended Proposal					█									
6	Requirement Study						█	█	█	█	█				
7	Analyse the Data Collected						█	█	█	█	█				
8	Project Work Continues								█	█	█	█	█		
9	Proposal Defense and Progress Evaluation											█			
10	Submission of Interim Draft Report													█	
11	Submission of Interim Report														█

Table 4: Gantt-Chart for FYP 1

No	Project Activities	Weeks													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Finalising the Requirement and Specification	█	█	█	█	█									
2	Submission of Progress Report				█										
3	Project Work Continues						█	█	█	█	█	█			
4	Pre-SEDEX										█				
5	Submission of Draft Report											█			
6	SEDEX												█		
7	Submission of Dissertation (soft bound)												█		
8	Submission of Technical Paper												█		
9	VIVA													█	
10	Submission of Project Dissertation (Hard Bound)														█

Table 5: Gantt-Chart for FYP 2

CHAPTER 4: RESULT & DISCUSSION

4.1 Result from Interview with Expert

Expert	En Azahari B Awaluddin
Venue	Chancellor Complex
Date	11 July 2013
Time	12.00 p.m. – 12.30 p.m.
Recommendations for the project	<p>➤ User Design Requirements</p> <ul style="list-style-type: none"> a) Able to manage online requisition through intranet b) Additional of online approval c) Inclusive of email notification to the user to alert the user d) Able to manage inventories through auto count in and out items e) Able to alert the Admin when reached minimum stock f) May perform reporting on expenditure/requisition on departmental and items basis g) May acknowledge the Administrator and Requestor the progress of requisition h) More user friendly

Table 6: Interviewed En Azahari

4.2 Process Flow of Stationery Management System

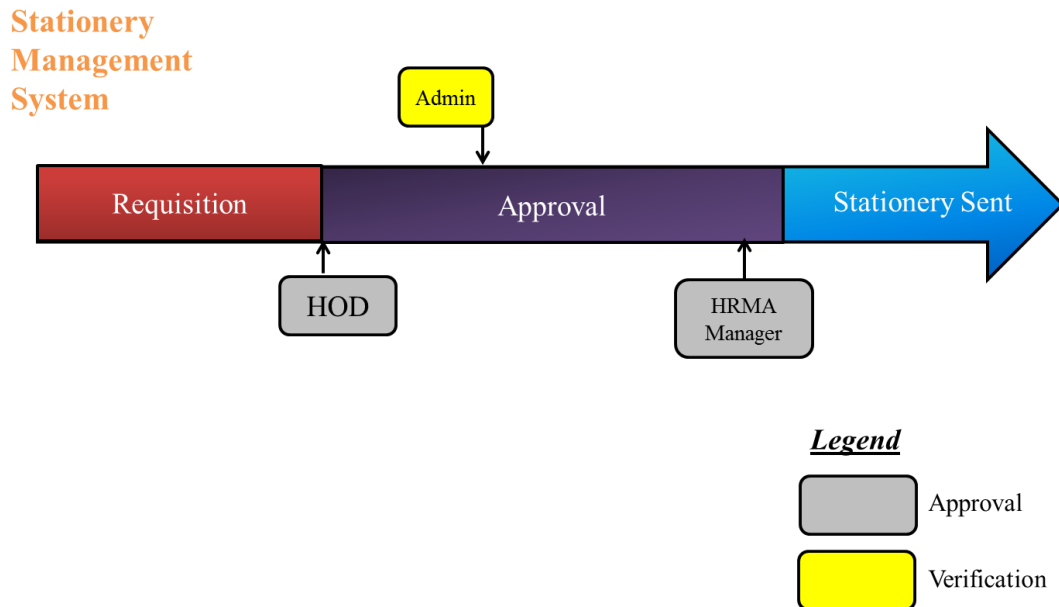


Figure 4: Process Flow of Stationery Management System

The process flow of the Stationery Management System is being remained as currently practice so that the current user will not experience any difference in requesting the stationeries. The comparison of both process are being shown as below:

Features	Current Manual Process	Stationery Management System
Requisition	Paper-based form	Online requisition
Approval	Manual	Online approval with backup list
Notification	None	Email
Estimation time taken (max)	7 days	3 days
Reports	None	Departmental and Items basis periodically
Inventories	Manually count	Auto count
Tracing progress	None	Email alert the Requestor and Administrator

Table 7: Comparison of current Manual Process with Stationery Management System

4.3 Flowchart of Stationery Management System

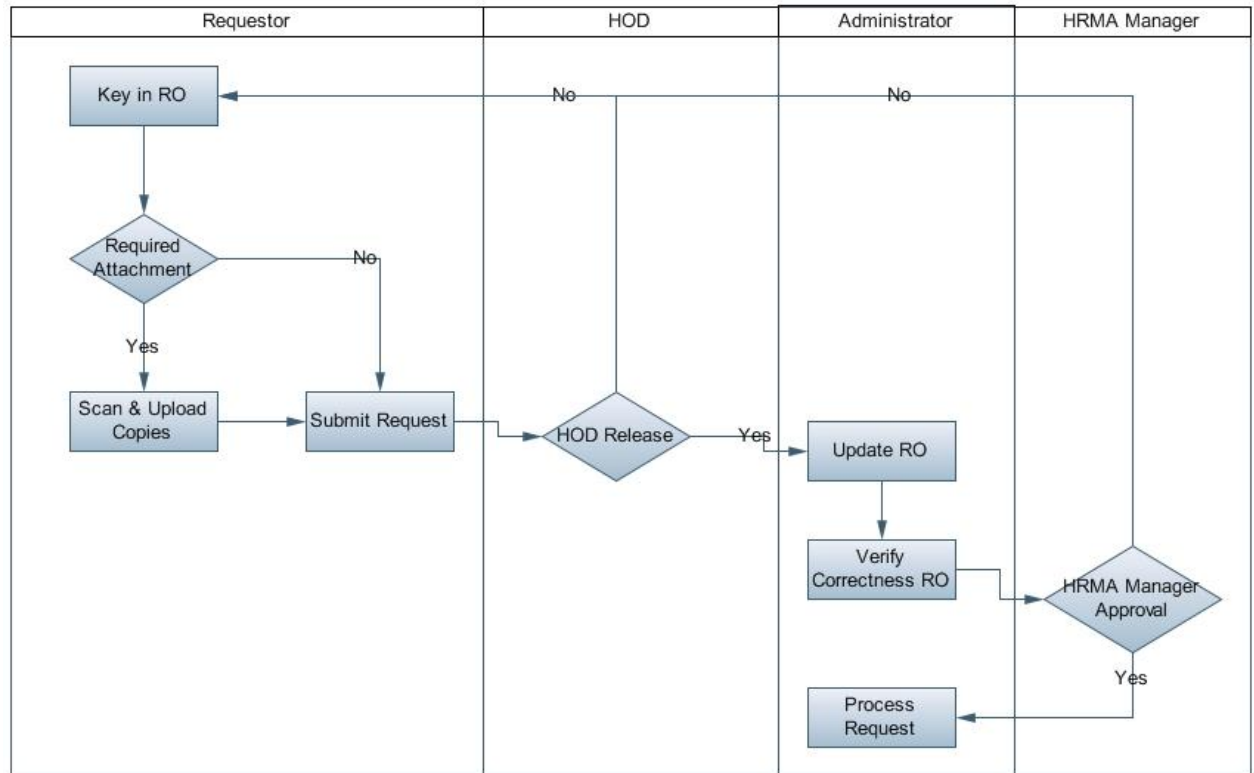


Figure 5: Flowchart of Stationery Management System

Flow Description

The details shown below are the description of the proposed flow of Stationery Management System that will be practice in UTP:

No.	Stationery Management System Process	Description
1.	Select Item	Requestor will select the item from the system
2.	Scan & Upload Copies	Requestor will upload any related attachments if required
3.	Submit Requisition Order (RO)	Requestor will submit the RO
4.	HOD released the RO	HOD need to release the RO to be process
5.	Update and Verify RO	Admin will update and verify the RO to be approve
6.	Approval from Admin Manager	Admin Manager need to approve the RO as the final approver
7.	Process Request	Admin will process the RO upon approval by the Approver

Table 8: Description of New Proposed Flow

Key User's Responsibilities

In order to complete the process, there are needs to all the key users of Stationery Management System fulfil their respective responsibilities. These are the list of the key users and their responsibilities:

1. Requestor

- Request the stationery and fill in the details needed.
- Administrative Assistant for respective departments

2. Head of Department (HOD)

- Release the Requisition Order (RO) to be process by the Administrator for further process procedure.
- Head and Deputy Head of each Department

3. Administrator (Admin)

- The one who manage the whole system.
- Enter/update the list of item. He will update and verify the correctness of the RO details before being approved. Lastly, after the RO being approved, he will process the request.
- En Azahari b Awaluddin and En Aminur Rashid b M Shariai

4. HRMA Manager

- Final approver of the process.
- En Aminur Rashid b M Shariai and En Mohd Zuhri b Zainudin

Since there are 4 key users in this system, so there are also 4 different panels and authority levels will be implemented in this system.

4.4 Stationery Management System Functional Specification

1. Login Page

Upon opening the system the user are required to fill up following information.

#	Column	Description	Input type	System Action
1.	Login as:	Indicate the user type.	COMPULSORY <ul style="list-style-type: none"> List box /radio button 	Contents of list box are predefined.
2.	Name:	Indicate the user's name.	COMPULSORY <ul style="list-style-type: none"> Text box List box 	This is to allow the user to specify their details. Contents of list box are predefined based on the user type chosen.
3.	Department:	Indicate the department of the user.	COMPULSORY <ul style="list-style-type: none"> Text box View only 	This is to specify the user's details. System will automatically enter the user's department based on the name specified.
4.	Mobile No:	Indicate the contact no of the user.	COMPULSORY <ul style="list-style-type: none"> Text box View only 	This is to specify the user's details. System will automatically enter the user's mobile no based on the name specified.
5.	ID:	Unique ID of the user based on their staff ID	COMPULSORY <ul style="list-style-type: none"> Text box 	This to identify the correct user as per name selected. Act as password to the system.

Actions available after entering log in information

Action	Description	System Action
Log In	Logging in to the system	<ul style="list-style-type: none"> System will route to the landing page based on the authority limit if the password is correct.

2. Create a New Request/ Update RO - Requestor

New request form will require the following information.

#	Column	Description	Input type	System Action
1.	My Request:	Display the previous list of RO	COMPULSORY <ul style="list-style-type: none"> Text box– table Link 	System will show the details of RO when the Requestor click the link.
2.	Update RO:	User will update or edit the RO.	COMPULSORY <ul style="list-style-type: none"> Text box – table Link 	System will show the details of RO when the Requestor click the link. Requestor is able to update/ edit the RO details.
3.	Create New Request:	User will able to create a new request	COMPULSORY <ul style="list-style-type: none"> Check box 	This is to allow the Requestor to create the new request upon tick the box.
4.	RO Date:	Display the date of the RO created.	COMPULSORY <ul style="list-style-type: none"> Text box View only 	Appear if the Requestor ticks on item (3). System will automatically enter the current date.
5.	Item Category Code:	To classify the item according to the item category.	COMPULSORY <ul style="list-style-type: none"> List box 	This is to allow Requestor to select the item category. Contents of list box are predefined.
6.	Item Sub-Category Code:	To classify the item according to the item sub-category.	COMPULSORY <ul style="list-style-type: none"> List box 	This is to allow Requestor to select the item sub-category. Contents of list box are predefined.
7.	Quantity:	User will enter the quantity of the item requested.	COMPULSORY <ul style="list-style-type: none"> Text box 	This is to allow the Requestor to specify the quantity of the item requested
8.	Unit of Measure:	User will enter the unit of measure of the item requested to buy.	COMPULSORY <ul style="list-style-type: none"> List box 	Contents of list box are predefined based on the item selected.

#	Column	Description	Input type	System Action
9.	Justification of Request:	Users will enter a longer justification of their item to enable Admin/Approver to make initial assessment and evaluation of item.	COMPULSORY <ul style="list-style-type: none"> • Paragraph text box 	This is to allow the Requestor to justify their request.
10.	Add Item:	Indicate whether the user want to add the item in the RO.	COMPULSORY <ul style="list-style-type: none"> • Check box 	This is to allow the Requestor to add more items. Item (2 – 6) will appear if the user ticks the box.
11.	Total Item Amount:	Display the total amount of item in the RO.	COMPULSORY <ul style="list-style-type: none"> • Text box • View only 	System will automatically sum the amount of the listed item requested.
12.	Attachments	User will be allowed to upload multiple attachments as support documentation for their request.	OPTIONAL	Executable files not allowed. Maximum total file size= 15MB

Actions available after entering RO information

Action	Description	System Action
SUBMIT	Submit the Requisition Order (RO)	<ul style="list-style-type: none"> • Enable if the user tick the “Create New Request” check box. • System will route the request to the Admin • RO number will be generated. • Pop out windows appear stated “The RO is already submitted.” • Notification email will be sent to the user, HOD and Admin.
SAVE	Update the Requisition Order (RO)	<ul style="list-style-type: none"> • Enable if the user click the Edit/Update RO link in the RO List. • System will route the request to the Admin • RO will be updated. • Pop out windows appear stated “The RO is already updated.” • Notification email will be sent to the user, HOD and Admin.
CANCEL	Discard the Requisition Order (RO)	<ul style="list-style-type: none"> • System will return to previous screen. • RO number will not be generated. • Pop out windows appear stated “The RO is already cancelled.” • Notification email will not be sent.

3. Release RO – HOD

Upon receipt of notification email, the HOD will be able to open the RO by

- clicking on the provided link
- logging in to the Stationery Management System application

Based on the request created by the user, system will route the request to the respective HOD to release the RO for further procedures.

The HOD will access to the following action options or information.

#	Column	Description	Input type	System Action
1.	Release the RO lists	To display the list of the RO to be release as requested by the Requestor.	COMPULSORY <ul style="list-style-type: none"> • Text box– table • Link 	System will show the details of RO when the HOD click the link.
2.	View Attachment	Lists attachment uploaded by Requestor. Allows HOD to click and open attachment to view	Link	Open attachment in pop-up windows
3.	Assessment/Remark	HOD will enter comment or information relating to the request.	Paragraph text box	This is to allow HOD to give any remarks/comments regarding the request.

Actions available after viewing requests

Action	Description	System Action
RELEASE	Release the RO to the next step in the process	<ul style="list-style-type: none"> • System will send the RO to the next step in the process. • Pop out windows appear stated “The RO is already released.” • Notification email will be sent to the Requestor and Admin.
REJECT	Reject the RO	<ul style="list-style-type: none"> • System will return the RO to the Requestor. • Pop out windows appear stated “The RO is already rejected.” • Notification email will be sent to the Requestor and Admin.

4. Process RO – Admin

Upon receipt of notification email, the admin will be able to open the RO by

- clicking on the provided link
- logging in to the Stationery Management System application

The Admin will access to the following action options or information.

#	Column	Description	Input type	System Action
1.	Process the RO lists	To display the list of the RO to be process as requested by the Requestor.	COMPULSORY <ul style="list-style-type: none"> • Text box– table • Link 	System will show the details of RO when the Admin click the link.
2.	Update RO:	User will update or edit the RO.	COMPULSORY <ul style="list-style-type: none"> • Text box – table • Link 	System will show the details of RO when the Admin click the link. Admin is able to update/edit the RO
3.	Classification of Item	To allow user to identify the category of the item. List box will automatically show scroll bar if list is long.	COMPULSORY <ul style="list-style-type: none"> • Category Code • Sub-Category Code • List box 	Depending on the categorisation changes made by the Admin, the system will automatically trigger rerouting. Contents of list box are predefined.
4.	Justification of Request	Users will enter a longer justification of their item to enable Approver to make initial assessment and evaluation of item.	COMPULSORY <ul style="list-style-type: none"> • Paragraph text box 	This is to allow the Requestor to justify their request.
5.	Attachments	User will be allowed to upload multiple attachments as support documentation for their request	OPTIONAL	Executable files not allowed. Maximum total file size= 15MB
6.	View Attachment	Lists attachment uploaded by Requestor. Allows Admin to click and open attachment to view	Link	Open attachment in pop-up windows

#	Column	Description	Input type	System Action
7.	Assessment/Remark	Admin will enter comment or information relating to the request.	Paragraph text box	This is to allow Admin to give any remarks/comments regarding the request.

Actions available after updating and verifying RO

Action	Description	System Action
SUBMIT	Send the RO to the next step in the process	<ul style="list-style-type: none"> • System will send the RO to the next step in the process. • Pop out windows appear stated “The RO is already submitted.” • Notification email will be sent to the Requestor and HRMA Manager.
CANCEL	Discard all changes made	<ul style="list-style-type: none"> • System will return to previous screen. • Pop out windows appear stated “The RO is already cancelled.” • Notification email will not be sent.

5. Approve RO – HRMA Manager

Upon receipt of notification email, the HRMA Manager will be able to open the RO by

- clicking on the provided link
- logging in to the Stationery Management System application

The HRMA Manager will access to the following action options or information.

#	Column	Description	Input type	System Action
1.	Approve the RO lists	To display the list of the RO to be approve as requested by the Requestor.	COMPULSORY <ul style="list-style-type: none"> • Text box – table • Link 	System will show the details of RO when the HRMA Manager click the link.
2.	View Attachment	Lists attachment uploaded by Requestor. Allows HRMA Manager to click and open attachment to view	Link	Open attachment in pop-up windows
3.	Assessment/Remark	HRMA Manager will enter comment or information relating to the request.	Paragraph text box	This is to allow HRMA Manager to give any remarks/comments regarding the request.

Actions available after viewing requests

Action	Description	System Action
APPROVE	Approve the RO to the next step in the process	<ul style="list-style-type: none"> • System will send the RO to the next step in the process. • Pop out windows appear stated “The RO is already approved.” • Notification email will be sent to the Requestor and Admin.
REJECT	Reject the RO	<ul style="list-style-type: none"> • System will return the RO to the Requestor. • Pop out windows appear stated “The RO is already rejected.” • Notification email will be sent to the Requestor and Admin.

6. Item Master – Admin

To ensure the product/item requested by the Requestor is from the list provided in the application, the Admin should enter/update the item list based on latest needs.

To enter the new item or update the item in the list, the Admin will be able to open the option by

- logging in to the Stationery Management System application

The Admin will access to the following action options or information.

#	Column	Description	Input type	System Action
1.	Task:	Indicate whether the Admin want to add new item or update the current item.	COMPULSORY • List box /radio button	Contents of list box are predefined.
2.	Item Category Code:	To classify the item according to the item category.	COMPULSORY • List box	This is to allow Admin to specify the item category. Contents of list box are predefined.
3.	Item Sub-Category Code:	To classify the item according to the item sub-category.	COMPULSORY • List box	This is to allow Admin to specify the item sub-category. Contents of list box are predefined.
4.	Item Code:	To differentiate the item using a unique code.	COMPULSORY • Text box	This is to allow Admin to enter the item code. Error message will pop out if the code already exists in the system and ask the Admin to re-enter the code.
5.	Item Description:	User will enter the description of the item.	COMPULSORY • Text box	
6.	Quantity:	User will enter the quantity of the item added.	COMPULSORY • Text box	This is to allow Admin to enter the item quantity.

#	Column	Description	Input type	System Action
7.	Unit of Measure:	User will enter the unit of measure of the item that can be purchased.	COMPULSORY • List box	Contents of list box are predefined.
8.	Minimum Quantity:	User will enter the minimum quantity for the specified item.	COMPULSORY • Text box	This is to allow Admin to specify the minimum quantity for the item. Once the available quantity reach the minimum quantity, Admin will be notified.
9.	Preference Supplier:	Users will enter a recommended supplier based on tendering for specified item.	COMPULSORY • Text box	
10.	Alternate Supplier:	Users will enter an alternate supplier based on tendering for specified item.	COMPULSORY • Text box	

Actions available after entering item information

Action	Description	System Action
SAVE	Save the new item/Update the item	<ul style="list-style-type: none"> • System will route the entry to the Item list. • New item is added / updated on the list. • If the Admin select the “Add New Item” task, pop out windows appear stated “The new item is already saved.” • If the Admin select the “Update Current Item” task, pop out windows appear stated “The item is already updated.” • Notification email will be sent to the Admin.
CANCEL	Discard the new entry	<ul style="list-style-type: none"> • System will return to previous screen. • Pop out windows appear stated “The new item is already cancelled.” • Notification email will not be sent.

7. Vendor/Supplier Master – Admin

For each product/item requested by the Requestor, there must also have the list of the supplier provided in the application. After the periodically vendor evaluation, the Admin should enter/update the supplier list based on latest fulfilling the requirement.

To enter the new supplier in the list, the Admin will be able to open the option by

- logging in to the Stationery Management System application

The Admin will access to the following action options or information.

#	Column	Description	Input type	System Action
1.	Supplier Category Code:	Indicate which category code does the supplier belongs to	COMPULSORY • List box	Contents of list box are predefined.
2.	Supplier Code:	To differentiate the supplier using an unique code	COMPULSORY • Text box	This is to allow Admin to enter the supplier code. Error message will pop out if the code already exists in the system and ask the Admin to re-enter the code.
3.	Supplier Description:	User will enter the description of the supplier	COMPULSORY • Text box	
4.	Company Name:	User will enter the name of the company	COMPULSORY • Text box	This is to allow Admin to enter the company name.
5.	Address:	User will enter the address of the company	COMPULSORY • Paragraph text box	This is to allow Admin to enter the company address.
6.	City:	User will enter the city of the company	COMPULSORY • Text box	This is to allow Admin to specify the company address.
7.	Postcode:	User will enter the postcode of the company	COMPULSORY • Text box	This is to allow Admin to specify the company address.

#	Column	Description	Input type	System Action
8.	State:	User will enter the state of the company	COMPULSORY • Text box	This is to allow Admin to specify the company address.
9.	Telephone:	User will enter the company's telephone no	COMPULSORY • Text box	This is to allow Admin to enter the company's details.
10.	Fax:	User will enter the company's fax no	COMPULSORY • Text box	This is to allow Admin to enter the company's details.
11.	Email:	User will enter the company's email	COMPULSORY • Text box	This is to allow Admin to enter the company's details.
12.	1 st Contact Person:	User will enter the 1 st contact person of the company	COMPULSORY • Text box	This is to allow Admin to enter the 1 st contact person details.
13.	1 st Contact Person Salutation:	Indicate the 1 st contact person salutation	COMPULSORY • List box /radio button	This is to allow Admin to enter the 1 st contact person details.
14.	1 st Contact Person Telephone:	User will enter the 1 st contact person's telephone no	COMPULSORY • Text box	This is to allow Admin to enter the 1 st contact person details.
15.	1 st Contact Person Email:	User will enter the 1 st contact person's email	COMPULSORY • Text box	This is to allow Admin to enter the 1 st contact person details.
16.	2 nd Contact Person:	User will enter the 2 nd contact person of the company	COMPULSORY • Text box	This is to allow Admin to enter the 2 nd contact person details.
17.	2 nd Contact Person Salutation:	Indicate the 2 nd contact person salutation	COMPULSORY • List box /radio button	This is to allow Admin to enter the 2 nd contact person details.
18.	2 nd Contact Person Telephone:	User will enter the 2 nd contact person's telephone no	COMPULSORY • Text box	This is to allow Admin to enter the 2 nd contact person details.
19.	2 nd Contact Person Email:	User will enter the 2 nd contact person's email	COMPULSORY • Text box	This is to allow Admin to enter the 2 nd contact person details.

#	Column	Description	Input type	System Action
20.	Credit Terms (Days):	Indicate the credit terms of the company	COMPULSORY <ul style="list-style-type: none"> List box /radio button 	This is to allow Admin to specify the supplier credit terms.

Actions available after entering supplier information

Action	Description	System Action
SAVE	Save the new supplier	<ul style="list-style-type: none"> System will route the entry to the Supplier list. New supplier is added on the list. Pop out windows appear stated "The new supplier is already saved." Notification email will be sent to the Admin.
CANCEL	Discard the new entry	<ul style="list-style-type: none"> System will return to previous screen. Pop out windows appear stated "The new supplier is already cancelled." Notification email will not be sent.

8. Create New User – Admin

To differentiate the roles in the system, the user will be classified into several groups; Requestor, Admin, Head of Department, Auditor, Trainee and HRMA Manager.

To enter the new user in the list, the Admin will be able to open the option by

- logging in to the Stationery Management System application

The Admin will access to the following action options or information.

#	Column	Description	Input type	System Action
1.	User Name:	Admin will specify the new user name	COMPULSORY • List box	Admin will choose the new user from the staff list name.
2.	Department:	Indicate the department of the user.	COMPULSORY • Text box • List box	This is to allow Admin to specify the user's details. Contents of list box are predefined.
3.	Mobile No:	Indicate the contact no of the user.	COMPULSORY • Text box • List box	This is to allow Admin to specify the user's details. Contents of list box are predefined.
4.	ID:	Unique ID of the user based on their staff ID	COMPULSORY • Text box	This is to allow Admin to specify the user's details according to their staff ID. Act as password to the system.
5.	User Type:	Indicate the user type	COMPULSORY • List box /radio button	This is to allow Admin to specify the user type. Contents of list box are predefined.

Actions available after entering item information

Action	Description	System Action
SAVE	Save the new user	<ul style="list-style-type: none">• System will route the entry to the User list.• New user is added on the list.• Pop out windows appear stated “The new user is already saved.”• Notification email will be sent to the Admin and the New User.
CANCEL	Discard the new user	<ul style="list-style-type: none">• System will return to previous screen.• Pop out windows appear stated “The new user is already cancelled.”• Notification email will not be sent.

CHAPTER 5: CONCLUSION & RECOMMENDATIONS

In a nutshell, this project is focusing to develop a new system for the UTP Stationery Management System by applying online requisition system. Online requisition system is needed in order to improve the current process and also to solve all the problems those arise from using the current system. Requirement study is done to ensure that the system that will be developed meet the requirements as needed by the UTP Administration. The objective of the new system is to improve the efficiency and effectiveness of the Administration system. This system also will be developed by using the latest technology and the data collection will be done to ensure that this system is feasible to be used and it is also important to make sure it is user-friendly. After the performing the analysis, it is found that the additional features that will be included in the new system may increase the efficiency and effectiveness in performing administration tasks.

As a recommendation for further study, it is better to include all the UTP staff in the database so that they will able to request the stationeries by themselves without relying on their department's Admin Assistant. This could increase the user friendliness to the system.

5.1 Relevancy to the Objectives

The author found that undertaking activities in order to enhance Stationery Management System by improving and integrating some of the options are an efficient and relevant objective as it fulfils SMART criteria;

- **S** stands for **Specific** as the project has a very specific set of objectives which to be completed upon the completion of this project.
- **M** stands for **Measurable** as the user satisfaction in meet the expectation become the indicator whether the project meet its objectives or not.
- **A** stands for **Achievable** as the resources and dependencies for this project are factors internal to UTP and therefore manageable.

- **R** stands for **Realistic** as the idea to enhance the Stationery Management system can be done as to improve the system do not require the capabilities in terms of expertise and technology.
- **T** stands for **Timely** as we set mid-October as the deadline for the author to deliver full report of requirement study with the specification of the new proposed system which can be used during the development phase of the new Stationery Management system in Final Year Project 2.

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APPENDICES

TECHNICAL PAPER

Universiti Teknologi PETRONAS

Stationery Management System

General Administration System

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Abstract - This paper is prepared to provide an overview on a new approach for UTP Stationery Management System. The main objective of this project is to develop the Universiti Teknologi PETRONAS (UTP) Stationery Management System (SMS), in order to improve from the current manual process. The purpose of enhancement from the current process into a new system is to improve the efficiency and the effectiveness of the system. The inefficiency of the process can be identified as no record on spending/requisition, manual process as the source of delay and inventory issues. Online requisition system has been applied widely by many organizations especially in this era. The benefits that make it convenient are like reducing the usage of paper, online approval, easy online entry and shorten the time taken.

I. INTRODUCTION

In order to realise the UTP Human Resource Management & Administration Department objective, they planned to have a system called the General Administration System. The General Administration System function is a system which inclusive of F&B Requisition System, Stationery's Management System,

and Mail Management System. In this project, it will mainly focusing Stationery's Management System that includes requesting stationery online from the staff through the intranet. It does also involve the inventory and tracking record.

Problem statements of the project:

- a. There is no record on spending on stationery by each department.
- b. The manual process is a source of delay whenever users misplace the documents.
- c. There is a workload to Administration in managing the inventories.

The objectives of the project:

1. To study the current process and practice of the Stationery Management applied by the Human Resources Management & Administration Department
2. To design and propose an enhance process that addresses the challenges
3. To develop a Stationery Management System based on the requirement given by the Human Resources Management & Administration Department

II. LITERATURE REVIEW

2.1 Definition of Inefficiency

As refer to Investopedia, efficiency is a level of performance that describes a process that uses the minimal inputs to create the maximum outputs. Efficiency involves the use of all inputs in generating the output, inclusive of time and energy. Time, money and raw materials are limited, so it is important to retain an acceptable level of output or a general production level, (Efficiency). Meanwhile, according to Dictionary.com, it also defines as an accomplishment of or ability to accomplish a job with a minimal usage of time and effort, (Efficiency).

2.2 Improve Efficiency through Technology

Through technology, processing of data and information retrieval can be done faster and easier, (Dragon). It can be done through applying taxonomy to the data input. In some cases, applying of technology to complete a task may eliminate the possibility of manual errors thus reduce the time taken, (Dragon). In fact, technology may also increase the efficiency through reducing irrelevant bureaucracy of a process by capturing only relevant and useful information, (Increase efficiency to maximise your profit).

2.3 Online Procurement

A basic Stationery Management System allows for the electronic processing of requisition, the records of inventories of those stationeries received as well as the tracing the payment records to the supplier. A Supplier list, along with corresponding Item catalogues and system defaults, allow the Requestor to quickly fill out line-item entries on Requisition Form with single clicks reducing their time spent and

eliminating input errors, (Elements of a good Purchase Order System).

Another advantage of having an electronic Stationery Management System is the ability to efficiently generate reports. Stationery Management System provide advantages including speeding up the order transmission process, lessening errors and retaining a clear log of when orders were sent and what they contained, (Best Practices in E-Procurement: Reducing Costs and Increasing Value through Online Buying, 2005).

III. METHODOLOGY

This project is focusing on developing an online system that can be used by all the UTP staffs through intranet. It has been proposed that the system that will be developed is a web based. These are several steps that will be taken during this phases. The steps are:

- 1) Analysis on the Website Requirements.
- 2) Structure of the Website and the Contents Involved.
- 3) Website Development Phase.
- 4) User Acceptance Testing.

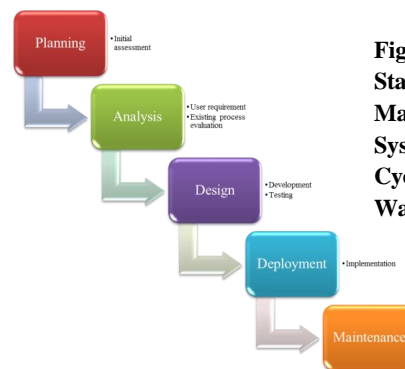


Figure 1:
Stationery
Management
System Life
Cycle Model,
Waterfall

3.1 Methods of Data Collection

- Interview with key user (Human Resource personnel)
- Analysing and documenting current process
- Propose a new process flow for Stationery Management System
- Specifying the system's functional specs

IV. RESULT AND DISCUSSION

4.1 Process Flow of Stationery Management System

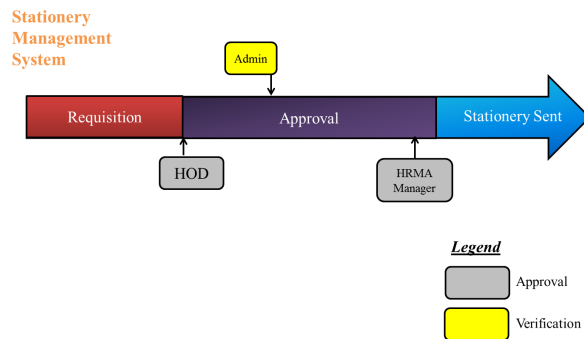


Figure 2 Process Flow of Stationery Management System

The process flow of the Stationery Management System is being remained as currently practice so that the current user will not experience any difference in requesting the stationeries. The comparison of both process are being shown as below:

Features	Current Manual Process	Stationery Management System
Requisition	Paper-based form	Online requisition
Approval	Manual	Online approval with backup list
Notification	None	Email
Estimation time taken (max)	7 days	3 days
Reports	None	Departmental and Items basis periodically

Inventories	Manually count	Auto count
Tracing progress	None	Email alert the Requestor and Administrator

Table 1 Comparison of current Manual Process with Stationery Management System

4.2 Flowchart of Stationery Management System

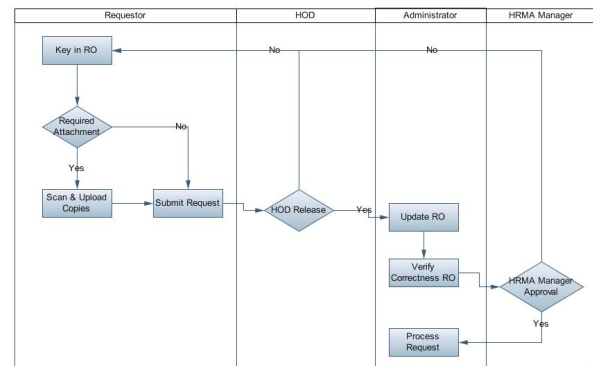


Figure 3 Flowchart of Stationery Management System

4.2.1 Flow Description

No.	Stationery Management System Process	Description
8.	Select Item	Requestor will select the item from the system
9.	Scan & Upload Copies	Requestor will upload any related attachments if required
10.	Submit Requisition Order (RO)	Requestor will submit the RO
11.	HOD released the RO	HOD need to release the RO to be process
12.	Update and Verify RO	Admin will update and verify the RO to be approve
13.	Approval from Admin Manager	Admin Manager need to approve the RO as the final approver
14.	Process Request	Admin will process the RO upon approval by the Approver

Table 2 Description of New Proposed Flow

4.2.2 Key Users' Responsibility

In order to complete the process, there are needs to all the key users of Stationery Management System fulfil their respective responsibilities. These are the list of the key users and their responsibilities:

1. Requestor

- Request the stationery and fill in the details needed.
- Administrative Assistant for respective departments

2. Head of Department (HOD)

- Release the Requisition Order (RO) to be process by the Administrator for further process procedure.
- Head and Deputy Head of each Department

3. Administrator (Admin)

- The one who manage the whole system.
- Enter/update the list of item. He will update and verify the correctness of the RO details before being approved. Lastly, after the RO being approved, he will process the request.
- En Azahari b Awaluddin and En Aminur Rashid b M Shari'ai

4. HRMA Manager

- Final approver of the process.
- En Aminur Rashid b M Shari'ai and En Mohd Zuhri b Zainudin

Since there are 4 key users in this system, so there are also 4 different panels and authority levels will be implemented in this system.

V. CONCLUSIONS AND RECOMMENDATIONS

In a nutshell, this project is focusing to develop a new system for the UTP Stationery Management System by applying online requisition system. Online requisition system is needed in order to improvise the current process and also to solve all the problems those arise from using the current system. Requirement study is done to ensure that the system that will be developed meet the requirements as needed by the UTP Administration. The objective of the new system is to improve the efficiency and effectiveness of the Administration system. This system also will be developed by using the latest technology and the data collection will be done to ensure that this is system is feasible to be used and it is also important to make sure it is user-friendly. After the performing the analysis, it is found that the additional features that will be included in the new system may increase the efficiency and effectiveness in performing administration tasks.

As a recommendation for further study, it is better to include all the UTP staff in the database so that they will able to request the stationeries by themselves without relying on their department's Admin Assistant. This could increase the user friendliness to the system.

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