

FM HELP DESK : USER COMPLAINT SYSTEM AS AN FM APPROACH FOR
FACILITIES MANAGEMENT SERVICES IN UNIVERSITI TUN HUSSEIN ONN
MALAYSIA (UTHM)

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ABSTRACT

An efficient and effective facilities management contributes to the productivity of an organisation in achieving its core activities. Higher educational institutions (HEIs), with teaching and learning as their core activities, have several physical and non-physical facilities to manage. In reality, this involves with complex challenges in meeting the needs and demands of dynamic and demanding stakeholders. Therefore, a mechanism must be identified and developed to meet their demands. Facility management (FM) help desk has been identified as an online system for the university community to channel any complaints about the university facilities. This system is able to handle the complaints by managing, recording and maintaining them in a systematic and effective manner. Through this system, complaints should be resolved within one day, three days or seven days depending on the degree of urgency of the cases. This research focuses on how the FM help desk system can help the university to manage its facilities and to determine FM satisfaction indicators for facilities management services delivered through the FM help desk system. This research also suggested the improvement of this system based on the FM satisfaction indicators. Mixed method was used in this research. Via quantitative approach, 317 sets of questionnaires were distributed to respondents representing various levels of the university staff. Semi-structured interview technique focusing on the officers who directly involved in the management of university facilities, on the other hand, was carried out to obtain qualitative data. The results showed that the majority of users were satisfied with the implementation of FM help desk system as a user complaint system to improve the efficiency of the university facilities management. Furthermore, it has been suggested that this system can be improved based on the FM satisfaction indicators i.e., people, IT and technology, place and process. Thus, FM help desk system has been identified as an important mechanism in enhancing the management of complaints towards a better implementation of a quality facilities management system in the university.

ABSTRAK

Pengurusan fasiliti yang cekap dan efektif menyumbang kepada produktiviti organisasi dalam mencapai aktiviti terasnya. Institusi pengajian tinggi (IPT) yang memfokuskan aktiviti terasnya kepada pengajaran dan pembelajaran, mempunyai pelbagai fasiliti dalam bentuk fizikal dan bukan fizikal secara realitinya berhadapan dengan cabaran yang begitu kompleks dalam memenuhi keperluan dan permintaan *stakeholder* yang dinamik dan mendesak. Sehubungan itu, satu mekanisme perlu dikenal pasti dan dibangunkan bagi memenuhi tuntutan ini. *Facility management (FM) help desk* telah dikenal pasti sebagai satu sistem atas talian bagi warga universiti mengemukakan sebarang aduan tentang fasiliti universiti. Sistem ini berupaya mengendali, merekod dan menyelenggara aduan secara sistematik, efisien dan teratur. Melalui sistem ini, aduan-aduan pengguna fasiliti perlu diselesaikan dalam tempoh satu hari, tiga hari atau tujuh hari mengikut darjah kesegeraan kes. Kajian ini memfokuskan kepada persoalan sejauhmana sistem *FM help desk* boleh membantu sistem pengurusan fasiliti universiti dan menentukan indikator kepuasan dalam perkhidmatan pengurusan fasiliti terhadap sistem tersebut. Kajian ini juga telah mencadangkan penambahbaikan berdasarkan indikator kepuasan FM. Kaedah campuran telah digunakan dalam penyelidikan ini. Melalui pendekatan kuantitatif sebanyak 317 borang kaji selidik telah diedarkan kepada responden iaitu staf pelbagai peringkat di UTHM bagi mendapatkan maklum balas. Manakala teknik temubual secara separa berstruktur telah dijalankan bagi mendapatkan data secara kualitatif dengan memfokuskan responden iaitu pegawai-pegawai yang terlibat secara langsung dalam pengurusan fasiliti universiti. Hasil kajian menunjukkan bahawa majoriti pengguna berpuas hati dengan pelaksanaan sistem *FM help desk* dan ia diterima sebagai satu saluran aduan yang dapat meningkatkan kecekapan sistem pengurusan fasiliti universiti. Seterusnya, telah dicadangkan bahawa sistem ini masih boleh dipertingkatkan melalui indikator kepuasan FM iaitu terdiri daripada sumber manusia, IT dan teknologi, tempat and proses. Dengan demikian sistem *FM help desk* telah dikenal pasti sebagai satu mekanisme penting dalam meningkatkan sistem pengurusan aduan ke arah pelaksanaan sistem pengurusan fasiliti yang berkualiti di UTHM.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Managing facilities in organisations especially higher educational institutions (HEIs) is very crucial. It requires an efficient and effective facilities management in terms of providing the best services to the users. If the buildings and other facilities are not properly managed, it will have a negative impact on the organisation's performance (Brian & Adrian, 2005).

Therefore, the study on the facility management (FM) help desk or an effective complaint system in an organisation is very important, especially in HEIs like Universiti Tun Hussein Onn Malaysia (UTHM). With 14,500 numbers of students as well as more than 1,800 academic and non academic staffs it must have a good and efficient facilities management system. All the facilities and equipment, assets and premises which are used for the teaching and learning purposes should be in a good condition and fully functional. Any complaints of damage and malfunction of the system should involve comprehensive network system integration, so that any remedial action can be implemented quickly and effectively.

In view of the above constraints, the administration of UTHM has identified a FM help desk as a useful mechanism or user's complaint system in managing the facilities. There are various applicable models or systems which have been used as a mechanism in handling complaints. These mechanisms are called the FM help desk which is used locally and internationally (Barrett & Baldry, 2003). FM help desk is a system which can handle, resolve, record and maintain a complaint systematically and

efficiently. The report can be generated automatically either monthly or annually where it will help the management of administrator to manage and control the facilities issues in the university orderly.

1.2 Background of Research

Facilities management (FM) services are important to universities in supporting their core business i.e., teaching and learning activities. HEIs are among those organisations in a service industry. Like any other organisations, they realize that the mission of a university is to provide a high quality teaching and learning environment. Universities are providing various infrastructures and facilities to their communities in ensuring a conducive working and living environment. In this regard, there should be an effective facilities management system and good mechanism in facilitating the complaints (Sapri & Pitt, 2005).

Complaint handling becomes an important mechanism for minimizing dissatisfaction among the users in an organization both in private and public sectors (Najar, 2009). According to International Facilities Management Association, IFMA (2005), facilities management is defined as a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating the four main resources i.e., people, place, process and technology. The role of the facility manager is to coordinate these types of the main resources effectively. In an organisation like a university, there are various parties involved with a wide range of demands and requirements, and these come under facilities management issues which must be fulfilled accordingly.

Therefore, the purpose of this research is to examine the role of FM help desk as a user complaint system in improving the delivery of FM services in UTHM. The application of FM help desk has been implemented since September 2009 in Development and Property Management Office (PPH) of UTHM.

This research began in the early on 2009, where the FM help desk system was still not yet implemented in PPH. As, the FM help desk system has only started in late

2009, this research therefore would examine the needs, role, contributions and suggestions to improve the system in PPH.

1.3 Problem Statement

Managing facilities in HEIs are very critical due to the various stakeholders involved in the organisation (Sapri, Kaka & Finch, 2009). In the facilities management field, there are various parties and a wide range of expertise involved in an organisation to manage the facilities. While in organisations like HEIs, an efficient and effective facilities management in terms of providing the good services to the users is required. If the building and other facilities are not managed properly, it will affect the organisation's performance (Brian & Adrian, 2005).

There is no specific approach to managing facilities. Each organisation, even within the same sector, will have different needs. Understanding those needs is the key in providing the best services in managing facilities in HEIs (Sapri, Kaka & Finch, 2009). It is due to the various parties involved in an organisation. One of the parties refers to the users of the facilities in an organisation. For the university, the complex problem faced is to manage the complaints regarding the facilities by the students and staff. In some situations, users get frustrated waiting for effective services after lodging a complaint on facilities breakdown. It happens when problems or issues reported are not properly managed and coordinated.

According to *Perancangan Strategik UTHM 2011-2016*, UTHM have set up their strategic plan which need to be implemented by improving accountability, quality and facilities provided with a sustainable learning environment for teaching and learning process among the students. To ensure effective and efficient environment, the university should establish and improve the existing mechanisms to be more effective and efficient in meeting the needs of students and staff for establishing its existing facilities services. At the same time, when there is no integrated system as a one of the communication channels among the campus community, so the problem will arise where the systematic system or centralized system not implemented consistently in the university.

On the other hand, by referring to the *Laporan Bahagian Pengurusan Fasilitas, PPH (2010)*, a phenomenon that often occurred in the university's issues refer to the complaints against the facilities are very high, involving a total number of 30 complaints in one day, especially in the early hours of the teaching and learning process begins. A total of two (2) technicians involved cannot address the complaints for the lecturers, especially in the early morning during the lecturing period. When the technician in PPH received calls, they can only resolved 2 complaints from the whole, while 28 complaints yet unresolved (Wan Zahari, 2010).

Thus, it is necessary to find an effective mechanism or system where it can help in improving the quality of learning and teaching at the university to produce a conducive and effective learning environment. The SIRIM audit which was carried out in 2010 also have expressed the interest in the issue to the uses of facilities at the university complaints toward dissatisfaction among lecturers with the teaching and learning facilities provided which refers to the *Unit Kemudahan Pembelajaran & Pengajaran (UKPP)* of university in addressing complaints regarding facilities efficiently and effectively. Thus, a framework of facilities management systems in university regarding the teaching and learning need to be developed to address these issues. Therefore, this study leads to the formation of a conceptual framework for a facilities complaint system called the FM help desk where it has been developed based on the theoretical framework of facilities management and help desk concept to see the effectiveness of this system among the users in UTHM (Wan Zahari, 2010).

Effective complaints system in an organisation is very important, especially in HEIs like UTHM. With the population of 14,500 and 1,800 students and staff respectively, there is a need for a good management and efficient facilities. Facilities and equipment as well as a variety of teaching and learning assets and premises shall always be in good condition and fully functional. These include the equipment of teaching and learning using the latest technology such as projector, LCD, visualizer projector and so on. Any complaints of damage and malfunction of the system should involve comprehensive network system integration, so that any remedial action can be implemented quickly and effectively. It also helps the PPH to provide the best service to the UTHM communities (Wan Zahari, 2010).

Research into the FM help desk has been primarily directed towards the technical performance of setting up operational management within organisations. Nevertheless, the contributions of the FM help desk are not fully dealt with in the existing literature. In addition, from the literature review it was found that not enough studies have been conducted on the FM help desk. There are several research focuses on the topic of the help desk including call center, IT help desk, online customer complaint system, support system and information system. However, for the FM help desk issues, they have been discussed limitedly. There are a lot of researches have been discussed about the help desk and identified being widely carried out in the various topics. Nevertheless, there has been a small amount of research looking at the benefits of FM help desk (May, 2010).

Due to this, the administration of UTHM acknowledged that FM help desk, in the form of the user's complaint system is one of the mechanisms in managing the facilities. Generally, there are various applicable of help desk models or systems implemented locally and abroad. FM help desk is a user's complaint system which can handle record and maintain a complaint systematically and efficiently in PPH. Through the system, a report can be automatically generated monthly or annually. This will help the administrator in managing the facilities in UTHM effectively.

Based on these issues, there is a need to work on how to handle the user complaints accordingly and systematically. An effective facilities management user complaints system should be available to ensure user's satisfaction in the university. FM help desk becomes an integral system in a university to support the core business i.e., teaching and learning. It is seamlessly managed and reports on all requested complaint of the maintenance activities that are being seen as a service function which is responsible for bringing multiple resources to solve related issues towards the user's satisfaction (Niedzwiecki & Peterson, 2002). Hence, the administration of UTHM has been seen the FM help desk as one of a mechanism in managing the facilities and become on a user complaint system with efficiently and systematically.

A survey was conducted as a preliminary study in early 2009. The result showed that there is a need to improve user's management complaint system. This result showed the overall level of satisfaction among UTHM users on the services provided by the university. The result from the initial survey was done through online among UTHM staff suggested that there is a strong need for a systematic mechanism in managing facilities complaint to be established. Therefore this study will focus on the application of a new system i.e., FM help desk system and to determine satisfaction indicators of facilities management services delivered through the FM help desk system in UTHM.

The result indicated that the percentage of user satisfaction level in UTHM is not at a high level. Most of the respondents 57% (138) considered that the university needs to improve its services and 13% (31) of them were satisfied, 14% (35) are moderate and 16% (39) opined that the services provided are good.

Furthermore, during the research period there was no other research conducted on a user's complaint system that could provide a measure of the level of user's satisfaction on UTHM facilities and services. This is attributed to the lack of research and specific issues discussed on the FM help desk at the time of the study. The study on the FM help desk is very important to help the PPH in providing the best services to its users. Through the FM help desk, an effective management of the user complaints system can help to improve the productivity and image of UTHM community. As mentioned by May (2010), there has been a small amount of research conducted looking at benefits of help desk in managing facilities. Therefore, this study will focus on the benefits of using the FM help desk in handling user complaint on facilities in UTHM.

1.4 Research Questions

There are three (3) research questions in this study. These research questions become the basic guideline in achieving the primary objectives of the study i.e., :-

- (i) What is the complaint volume number from the FM help desk as a user complaint system applied in UTHM?
- (ii) How to determine FM satisfaction indicator for facilities management services delivered through the FM help desk system in UTHM?
- (iii) How to suggest improvement of the FM help desk system in UTHM based on the FM satisfaction indicator?

1.5 Research Objectives

This research aims to contribute knowledge in the field of facilities management issues in HEIs with specifically referring to UTHM. To answer the research questions above, three (3) objectives are identified as follows:-

- (i) To identify the complaint volume number from the FM help desk as a user complaint system applied in UTHM.
- (ii) To determine FM satisfaction indicators for facilities management services delivered through the FM help desk system in UTHM.
- (iii) To suggest improvement of the FM help desk system in UTHM based on the FM satisfaction indicators.

1.6 Scope of Research

The study focused on UTHM as one of the rapid physical developing HEIs in Malaysia. The size of the land area of UTHM has increased from 100 acres in 2005 to become 600 acres in 2007. While the building blocks in UTHM have been increased to almost 100

blocks with the gross floor area about 300, 000 s.q.m. PPH becomes a key player in providing infrastructure and managing facilities of the university.

1.7 Significance of Research

It is very important to highlight that at the beginning of this research in early 2009, the FM help desk system was still not yet implemented. The system only started at the end of the year 2009. Parallel with the study, the FM help desk was established with support from the Centre of Information Technology Office (PTM). After conducting a trial run for more than two years, the FM help desk system was officially launched by the Vice Chancellor in May 2012.

This research brought together the establishment and discussion on roles, contribution and the effectiveness of the system in managing facilities and the request complaint from the university community. This research also discussed on how to improve the FM help desk system for better user's satisfaction.

Specifically, this study contributes to UTHM community i.e., students, academic staff and also non-academic staff in terms of fulfilling their daily requirement related to facilities in the university. The system would categorise the user report into 3 categories according to the degree of priority i.e., report must be settled in one day for very important and critical cases, three days for small damage and seven days for extensive damage.

In terms of administrative, this study helped the UTHM administration to identify records and plan properly for any decision of a matter to manage facilities and maintenance. Consequently, by doing research on the application of the FM help desk in UTHM could improve the facilities management system in the university. The system implemented could help PPH to achieve the standard level of satisfaction among the users in UTHM. Thus, this research will show that this user complaint system can give benefit and enhance better facilities management for the university.

A study on the FM help desk is very important to help PPH in order to provide the best services to its users in UTHM. Through this research, effective management of user complaints can be created to help raise productivity and image of the UTHM

community to a better level. This study is important due to its contribution to the efficiency of asset and facility management system in UTHM.

The research's aim is to contribute the knowledge in the field of facilities management issues in public HEIs that refer to the FM help desk as a user complaint system in improving facilities management in the UTHM. On the time of the study there had been relatively little research completed focusing specifically on FM help desks. This research will be a value to facilities and property managers who are considering implementing a help desk service in their organisations. Furthermore, this research can be used by other parties in UTHM other than PPH especially for users and the students who used the facilities and infrastructures provided by the university. Lastly, the research provides knowledge with regard to defining what is a FM help desk in order to know its function and roles as a user complaint system in UTHM for the scope of facilities management.

1.8 Definitions of Terms

For purposes of consistency and to avoid ambiguity, it is necessary to give definition to the terms used. This is important to ensure that it gives meaning and understanding in the proper context during the study. The terms involved in the importance of writing include:-

Facilities Management (FM) : According to International Facilities Management Association (IFMA) 2005, FM is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology.

Help Desk : A help desk is a generic name typically associated with the end user support centre and it is seen as an integral part of the services function, responsible for bringing multiple resources to bear and solve to the client's satisfaction (May, 2010).

FM Help Desk : FM help desk in this study refers to the user complaint system applied in Development and Property Management Office (PPH) at UTHM. This system manages the requested complaints from the university community related to the facilities management scope.

Complaint : Complaint is an expression of displeasure, such as poor services at the organisation (Najar, 2009). In this research, complaints here refer to the user request about the maintenance and breakdown related to the facilities in UTHM. For this research, complaint defines as a term of any expression of dissatisfaction.

Users : Users consist of UTHM users or communities which refer to the student, academic staff and non-academic staff.

1.9 Research Limitation

There are limited numbers of research about the specific issues of the facilities management help desk. However, it is still helping the researcher to review the literature review based on the various topics of research on doing with the topic of the help desk. The FM help desk system is still in the early phase of implementation during the initial stage of the study. Application of FM help desk is limited, but there are a lot of applications on the help desk in other fields or purpose. Help desk application used in a variety of purposes, but in relating to the university is still limited.

So, this research focused on the FM help desk as a user complaint system in handling facilities management scope. But for the respondent of the research it is consist from the staff only because during the early stage for the implementation of this system, it just opened or can access only by the UTHM's staff not for the students. Furthermore, mostly the critical cases for complaint in UTHM focus on teaching and learning process, so only staff or lecturer involved to lodge the complaint for the breakdown happen in the classroom or lecturer hall.

1.10 Thesis Structures

Research writing of this thesis is structured into six (6) chapters. Each chapter will discuss details and more specific to every section as below:-

Chapter 1 : Introducing the subject to be discussed. It includes a background of research done which includes the research problem, research questions, research objectives, scope of research, significance of research, research definition of terms, research limitation and thesis structure.

Chapter 2 : Literature review and previous writing during the past within the scope of the FM help desk are discussed in this chapter. This literature review focuses on identifying research gaps that have not been discussed by previous researchers. The literature review is to provide an overview and justification to the necessary and make this subject as basic research in finding answers to questions that arise. Based on this study, FM help desk becomes a user complaint system to UTHM users.

Chapter 3 : The third chapter discusses the research framework and methodology. Discussions focus on the conceptual framework and research methodology used in this study. It covers the research design, the scope of the study, sampling studies, research instruments, data collection and data analysis methods.

Chapter 4 : In this chapter, the case study has been discussed through the real scope, which refers to the PPH in UTHM. The FM help desk becomes a user complaint system related to facilities management issues in UTHM for the university community. Further, in this chapter the analysis of the volume number of users' complaint details is elaborated by using the statistic trend and used the analysis of the Longitudinal Study as well. This section is separated into several parts which showed the total number of complaints to each unit, i.e., civil, electrical, mechanical, landscape, architecture and administration unit. At the end of this section the conclusions are discussed.

Chapter 5 : It will display the results and discuss about the results of the analysis data collected through surveys. Chapter 5 presents the findings of this research where the second objective to determine the FM satisfaction indicators for facilities management services delivered through the FM help desk system in UTHM has been achieved. This section displays the analysis of users' satisfaction within the UTHM's staff towards the FM help desk as a user complaint system in the PPH.

Chapter 6 : To formulate the results of the review for important decisions with reference to the conceptual framework of the FM help desk. Final analysis will be developed and suggested the theoretical implications and also for the further research recommendations. This chapter serves as the conclusion and recommendations of the research study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Literature review is very important in a research study to get a deeper understanding of issues relating to the previous research by using the appropriate framework to achieve the research objectives. According to Chua (2006a) literature review is an integral part of the whole research process, helping to get the comprehensive and extremely valuable input in preparing the research measures. Through literature review we can identify the gap analysis i.e., which area is still not explored by the previous researches.

The previous chapter discussed about introducing the subject. It includes a background of research, research problem, research questions, research objectives, scope of research, significance of the research, definition of terms, research limitation and thesis structures.

In this chapter, the past research related to the studies had explored within the scope of facilities management and help desk concept. The literature review focused on identifying research gaps that have not been discussed by previous researchers. It is to provide an overview and justification necessary to make the subject as a basic research in finding answers to the questions that arose. Based on this research, FM help desk becomes one of a mechanism for user complaint system to UTHM users.

2.2 Help Desk in Facilities Management (FM) Concept

According to the International Facilities Management Association, IFMA (2005) facilities management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology. In the process, there are services that are very complex and listing of different services is troublesome (Lindholm, 2005). Facilities management services are categorized into three; hard services, soft services and management services. Help desk is categorized as the management services which is a generic name typically associated with the end user support center and it is seen as an integral part of the services function, responsible for bringing multiple resources to bear and solve to the client's satisfaction (Verghis, 2002).

According to Alexander (1996) there are many kinds of facilities management support services. Support service may be provided by in-house resources, by external or combination of the two. There are several types of service groups in terms of providing service in an organisation. Hence, if we discuss about the help desk it will refer either to help desk for property services or administrative services. Property service includes maintenance and replacement of components of the building. While for administrative services, help desk becomes as one of the provisions for this such diverse services.

The organisation needs to have a help desk or central coordination point if it is to deal effectively with customer enquiries about facilities and related services (Atkin & Brooks, 2009). The organisation in question did not believe that, given its relatively small size, it warranted a help desk. After all, the facilities manager appeared to know what was going on and he always seemed to be receiving calls from various people to tell the user if there were problems (Tunison & Coller, 1991).

In fact, over six week period, the facilities manager was so overwhelmed with the number of calls and visits he received that he managed to do little other work. Furthermore, there were complaints that some problems were not being resolved. In the end, it discussed the matteres with his senior management and obtained permission to set up a helpdesk on a three-month trial basis. Its scope was to cover security, transport, catering, cleaning, porter age, maintenance, mail services and room bookings. In the first

two weeks, the help desk attracted 500 enquiries most of which were dealt with promptly and to the satisfaction of the individual enquirer. In establishing the help desk, the organisation had created a focal point for solving with dealing with the problems. This meant that personnel were generally able to resolve matter immediately, rather than allowing them to escalate (Tunison & Collier, 1991).

Help desk is a resource designed to provide end users with information and assistance regarding problems with computers and related devices or software (Marcella & Middleton, 1997). Help desk in organisations is very important to the running of organisations. Over the last decade there are several models and application for the help desk, change from being a basic IT help desk that solves users problems to a more business orientated support centre (Madritsch & May, 2009). The help desk has emerged as a very important part of organisations and has been recognised as a place where organisation can gain competitive advantage (Marcella & Middleton, 1997).

There are some researches available that have tried to identify successful implementations of help desk, though they have not focused on the software used in help desk (Marcella & Middleton, 1996). In the help desk system, internet was used to provide a good source with information available in organizations like the Help Desk Online and Help Desk Institute. The information is somewhat generalized and scattered. This dissertation will be looking at how use of the software can make the help desk more effective and efficient. As a result, this research gives a software strategy for every help desk but some of criteria that can be applied to most help desks. In addition, this research discuss the different definitions of a help desk and has come up with a definition that is most appropriate to the large organizations and well organized help desks.

2.2.1 Definition of Facilities Management (FM)

FM includes a variety of services and disciplines namely the development, co-ordination, and management of all the non-core specialist services of an organization, together with the buildings and their systems, plant, IT equipment, fittings and furnishings, with the overall aim of assisting any given organization in achieving its

strategic objectives (Moore & Finch, 2004). In other words, facilities management covers from the planning stage, execution or construction and extended to the maintenance process of a building construction.

Facilities management is the process by which an organization delivers and sustains support services in a quality environment to meet strategic needs. This definition is based on the Centre for Facilities Management of UK (Alexander, 1996). Managing non-core business services enable an organisation to function at its most efficient and effective level. Implicit in this management role are the issues of customer satisfaction and value for money. The significance of facilities management is now being recognised. The facilities management industry is now maturing and is in a position to offer real added-value improvement to an organisation's core business (Tucker & Pitt, 2008).

The proper applications of facilities management techniques will enable organizations to provide the right environment for conducting their core business on a cost-effective and value for money basis. There are many definitions of facilities management. The one that best fits this research is an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organisation in order to create an environment that strongly supports the primary objectives of that organisation (Alexander, 1996).

2.2.2 Definition of Help Desk

A help desk is a generic name typically associated with the end user support centre. Increasingly, the help desk is being seen as an integral part of the service function, responsible for bringing multiple resources to bear to solve issues to the client's satisfaction (May, 2010).

A help desk is a part of the overall support mechanism that is responsible for the IT function in such areas as rolling out new software, writing software and developing software. Most researchers defined the help desk as a technical function that is placed in an organisation's IT department (Kane, 2001).

As Vergis (Kane, 2001) writes in the popular help desk FAQ's website that the help desk is a general term that is applied to the support function. Bruton (2002) writes that in many organisations the entire support function is called the "Help Desk" which would include selecting PCs and installation. It may also include network and communications support.

In a British Library report, help desk is an analysis of areas critical to help desk development and functionality, Marcella and Middleton (1996) assert that there is no definition of a help desk that is agreed by everyone, that help desks are typically internal, usually within an IT department or under customer services department. They concluded that help desks are typically responsible for supporting software applications, making repairs, adjustments to systems. Help desks are also responsible for inventory management, selecting equipment and statistical reports. Help desks support user training but to a lesser extent.

A help desk is an information and assistance resource that troubleshoots problems with computers or similar products. Corporations often provide help desk support to their customers via a toll-free number, website or e-mail. There are also in-house help desks geared towards providing the same kind of help for employees only. Some schools offer classes in which they perform similar tasks as a help desk. In the Information Technology Infrastructure Library, within companies adhering to ISO 2000 or seeking to implement IT Service Management best practice, a help desk may offer a wider range of user centric services and be part of a larger service department.

For business objective by Nano Desk Technologies (2002) defines the help desk as a phase of universal term, associated with the concept of having a single point of entry within a company setting to handle customer service requests. In essence, the help desk is the communication and knowledge transfer centre of any business. The primary responsibility is being the first contact voice that responds immediately to customers worldwide, both internal and external. Help desk staff control the service experience and level of satisfaction of a given situation with the goal to accomplish the following:

- Customer satisfaction/customer retention
- Personal relations
- Technology guidance
- Business posturing

2.2.3 History of Help Desk

Based on Tunison & Coller (1991) on his research the history of help desk started on the late of 1970s where it saw a heavy proliferation of online systems throughout North America. These systems presented new problems to both the end-user and the computer operation's staff. The end-user was usually a computer illiterate worker who had filled out forms for data entry in the past and who had little or no experience regarding electronic business information systems. Many of these workers were females from the pre-appliance first generation.

One of the most difficult problems facing these early users was their inability to determine whether there was an end-user problem or a system problem. On the other hand operation was experiencing an explosion in complexity. The small networks of the 1970s were growing in orders of magnitude. Critical applications were supported by redundant physical pathways. An operation was overflowing with new crude procedures dealing with the online and network applications. Many of these crude procedures involved the operations in a reactive mode which a reaction the user call is what prompted the execution of a procedure. It was in this environment that the help desk was born. The help desk was a place for the end-user to call with any problem regarding their new online systems. It was the place where operations concentrated their new procedures for reacting to the online user's call (Tunison & Coller, 1991).

The average help desk configuration in the early 1980s was one or several 3270 devices connected to the online systems. In the early days of online using usually had a mole for every online region resulting in scores of consoles for inspection. The help desk operator would take a call from the customer, record it on paper, and attempt to solve the problem through his 3270 devices. This often involved determining the status of the online region by submitting a sample transaction. Some network problems required that the operator move to the modem level and attempt restarting of telecommunications by issuing physical interrupts. Help desk operator had become the front line of problem resolution of the Network Control operator, and the trouble call repository (Tunison & Coller, 1991).

The present help desk at Westbridge operator is responsible for maintaining a log of calls received at his station. Many of the calls pertain to his traditional. Others pertain to more sophisticated problems either with the system in general or the application in particular. The call log provides problem solution with an idea of the trends in operational assistance that the end user needs (Tunison & Coller, 1991).

In the late 1980s automated system operations had become a reality. Many of the traditional network operation procedures had become automated. The norm for these systems was to respond prior to the end-user having a chance to call the help desk. Thus in sophisticated shops the traditional network operation component of the help desk was disappearing as the automation was tuned to an effective pro-active resolution system. So, what does the help desk operator have to do? The networks have continued to grow and additional devices are being added to them constantly. In addition, more systems are being added to the overall business complex of online systems. These systems must be staffed by people. The newly recruited staff continue to be drawn from the pre-appliance generation in addition to the average work force (Tunison & Coller, 1991).

When new recruits from the pre-appliance generation begin working on their system, there will undoubtedly be several calls regarding the on/off switch and other deceptively simple problems. More difficult problems are being experienced by users regarding the use of micro-computers as work stations. The help desk operator must be prepared to answer both the trivial and the increasingly more sophisticated questions (Tunison & Coller, 1991).

2.2.4 Types of Help Desk

The capability and form of user support or help desk provided varies depending on the organization. Bruton (2002) writes that user support comes in different forms. He divides support into the following forms below, where there are six (6) categories of user support i.e., help desk, technical support, research and development, technical library, user group representative, and lastly work station management and system maintenance:

Table 2.1 : Form and Categories of User Supports

| Form of User Support | Details |
|---|---|
| Help Desk | This typically provides support to users by a telephone, email, and fax to answer user queries and solve as many problems as possible. It provides support for simple problems and escalate this on to other groups. |
| Technical Support | Its function is to provide solutions to technical problems, which may sound the same as his definition of a help desk, it is generally more of a source of information and guidance than actually providing solution in this respect it differs from the help desk. |
| Research and Development | Users go here when the resources of the help desk are not adequate; this could be used where a product has a bug. This can be provided by the software supplier or within the organisation. |
| Technical Library | This is another form of support, it manages technical documentation. Users can find documentation on software to help them. It only enables the user to help themselves rather than directly solving their problem. |
| User Group Representative | A certain group of users or a department will have a user who is experienced in using the applications they use. This user will be an expert in the software and can filter out problems before going to the Help Desk or Technical Services. This is a popular method of support. |
| Workstation Management and System Maintenance | Users are supported in making a list of their requirement of software, hardware. PCs may have software installed that changes certain settings. If a PC is moved then a technician will be need to set up the PC in the new location. System maintenance involves replacing hardware when it malfunctions rather than waiting for the supplier to replace the hardware. |

Source : Bruton, 2002.

The help desk provides IT support to help users in organisations to do their tasks effectively and efficiently. A help desk is typically a function of an organisation where information technology problems are fixed and preventative measures are taken. The help desk is usually a centralized point within an organization. More than just fixing problems the help desk is proactive in trying to anticipate likely problems, find malfunctions, interruptions or network such as communications, revision levels, compatibility, configurations and capacities (Madritsch & May, 2009).

Madritsch & May (2009) defines two types of help desk, external help desks and an internal help desk. This research shall look at internal help desks. It operates within organisations and provide support for users within the organisation. They solve problems for users in all the different departments in an organisation. Typically the internal help desk supports the infrastructure such as the networks, PCs and peripherals. Internal help desks will deal with application problems and operating system problems. They are typically set up by software vendors to provide product support. This can be in the form of product updates or bug fixes, providing help with installing and using the software.

2.2.5 Help Desk Evolution

In order to understand help desk definition and concept itself, the approach used i.e., by using the spectrum analysis in ascending time started from the early research started from the year 1996 with the help desk issues until the latest study about the facilities management help desk in 2010. This evolution showed the development of help desk usage with their different functions and characteristics to each research.

A literature review of help desk on the various scopes and issues of the help desk by years for the period of 14 years shows that help desk is limited with a small amount of research conducted looking at the benefits FM help desk and is summarized in Table 2.2 at the next section.

The literature survey on help desk has been identified and being widely carried out in various issues including help desk become as a call centre, IT help desk, online customer complaint system, support system, information system, and lastly about

facilities management help desk. Although limited, there has been a small amount of research conducted looking at the benefits of FM help desk (May, 2010).

The earlier research discussed about role of the help desk in the strategic management of information systems (Marcella & Middleton, 1996). Then followed by research entitled “Helping the Help Desk” which is to determine a unique product which intends to offer support to the customers by using artificial intelligence strategies and assess their impact on attitudes to IT (Stinton, 1996). This research discussed how to get the help desk up and running. Among the points raised the staffing issues and a debate as to whether staff on help desk need to be experts or generalists. His argument that most help desk manager prefers staff with good communication skills, customer service, experience and an ability to handle stress, over and above other attributes (Stinton, 1996).

In addition the other authors discussed the issues the importance of help desk in academia and its characteristics to examine by some institutions which have successfully tackled the problem and suggestions for strategies, future developments and source of expert advice (Marcella & Middleton, 1997).

Then, Greer *et al.* (1998) have conducted a research on the intelligence of help desk as an application for helping the university learning process. Followed by research which have been done by Niedzwiecki & Peterson (2002) which explores on relationship and the related issues arising between help desk as a support with the Service Level Agreements (SLAs) in university.

For the year 2002 and 2003, there are research focused on online customer complaints or call centre. This research investigated the current sources and technology effect to the call centre among the organisations development especially in business scope (Cho *et al.* 2002).

Chen (2004) in his research To Help Helpdesk: A Field Study of Online Help System in campus context reported on a fields-based study of online help desk systems at the University of Maryland. The objectives of this research are to offer insights, enhance understandings, and provide a meaningful guide to design online help system for educational institutions.

Bulchand-Gidumal & Melian-Gonzalez (2009) have provided a description of the actions carried out at a Spanish Public University in which public management was improved at the same time that limitations to human resource were overcome. Lastly, May (2010) in his research studied an exploratory look at facilities and estates management help desks in four different case study organizations. This is the research that only discuss the issues of FM help desk but in the different case study which refer to the hospital and the commercial building.

A study completed by a Sheffield Hallam University student looked at facilities and estate management help desk in four different case studies of organisations. The findings suggest that the key factors for success of a FM help desk include mapping out all customer requirements, recruiting the correct operating staff, ensuring an appropriate working environment, and customer's communication once the help desk is operational (May, 2010). However, there limited research focusing on help desk for managing the facilities in HEIs. There has been a small amount of research conducted which looks which at the benefits of facilities management help desk (May, 2010). Furthermore, there is no research until now which explores and focuses on FM help desk in HEIs.

Table 2.2 : The Summary of Literature Reviews Upon Help Desk Issues by Years

| Authors & Years | Title | Issues | Organisations |
|--------------------------------|---|--|---------------------|
| 1) Marcella & Middleton (1996) | The Role of the Help Desk in the Strategic Management of Information Systems. | Focus on the potential of the help desk in enabling an organization or its customers to gather data on systems use, plan and implementation of IT development strategies and assess their impact on attitudes to IT | IT Company |
| 2) Stinton (1996) | Helping the Help Desk. | Examines a unique product which intends to offer support to the supporters by using artificial intelligence to the handling of users' queries. | Call Centre Company |
| 3) Marcella & Middleton (1997) | In Need of Support: The Academic Help Desk. | This research address the issues of distinguish the help desk in academia and it also find that it is often suffers from difficulty in defining its role and obtaining recourse, examines how some institutions have successfully tackled these problems and offers some suggestions for strategies, future developments and sources of expert advice. | University |

| | | | |
|---|--|---|---------------------------|
| 4) Greer <i>et al.</i> (1998) | The Intelligent Helpdesk: Supporting Peer-Help in a University Course. | This research discuss on help resources which are needed at an institutions-wide and also at a course-specific level, due to the limited time of instructors to provides help and answers questions among the university's users. And help desk also can be a as tools that provides an integration and application for helping the university learning | University |
| 5) Niedzwiecki & Peterson (2002) | Help Desk Support : To Be or Not To Be Eligible. | This paper is designed to review relationship and the related issues arising between helpdesk as a support with the Service Level Agreements, SLAs in university. | University |
| 6) Yoon Cheong <i>et al.</i> (2002) | An Analysis of Online Customer Complaints: Implication for Web Complaint Management. | The purpose of this paper is to investigates the current sources and causes of online complaints, seek effective ways of handling customers complaints by examining different product types and provide guideline for successful e-CRM. It is more focused on online user complaint in scope of business. | Business Company |
| 7) Workman (2003) | Results from Organizational Development Interventions in a Technology Call Centre. | This study concurrently investigated the effect technology call centre among the organizational development intervention focused on American economic sector. | Telecommunication Company |
| 8) Chen Ye (2004) | To Help Helpdesk: A Field Study of Online Help System in Campus Context. | This paper reports on a fields-based study of online help desk systems at the University of Maryland. The objectives of this research are to offer insights, enhance understandings, and provide a meaningful guide to design online help system for educational institutions. | University |
| 9) Bulchand-Gidumal & Melian-Gonzalez (2009) | Redesign of the IS/ICT Help Desk at a Spanish Public University. | This paper provides a descriptions of the actions carried out at a Spanish Public University in which public management was improved at the same time that limitations to human resource increase were overcome. | University |
| 10) May (2010) | Facilities Management Help Desks. | The purpose of this paper is to provide an exploratory look at facilities and estates management help desks in four different case study organizations. | Hospital & Hotel |

Source : Researcher, 2012.

In regards for the conclusion that have been drawn from the last research which discussed four different case studies i.e., hospital and commercial building, there are

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