

THE CRITICAL SUCCESS FACTORS OF DECLARATION OF THE
UNIVERSAL SERVICE PROVISION PROJECTS' COMPLETION

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UNIVERSAL SERVICE PROVISION PROJECTS' COMPLETION

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DEDICATION

My humble effort is dedicated to my loving family members and friends, who are always support and help me to continue this learning expedition.

Along with all of the hardworking and respected lecturers particularly my supervisor, I also dedicated this report to my esteemed Bosses and colleagues, which have always shared their thoughts and gave motivation to complete this study.

This is my contribution to the communications industry in this country particularly for the initiatives undertaken by the universal service provision, and I hope this will benefit everybody in the future journey.

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ABSTRACT

This research focuses on improving project declaration in the Universal Service Provision (USP) projects upon project completion. The USP in Malaysia is an initiative undertaken by the Malaysian Communications and Multimedia Commission (MCMC) to bridge the digital divide in rural and remote areas, particularly areas with no or limited services. There are three objectives of this research (1) to identify the critical success factors in managing the submission of project declaration upon project completion, (2) to implement the proposed interventions to overcome the problem, and (3) to implement the second intervention and investigate the improvement of submission of the USP project completion. The research was conducted using mixed-methods approaches, namely qualitative and quantitative in two action research cycles. In Cycle 1, the data collection starts with a qualitative method, where the researcher has conducted an interview session with the respective officers. The information gathered was analyzed using NVivo 12 Plus software for thematic analysis. Then for quantitative, the questionnaires were distributed to a total of 13 respondents for their feedback. The questionnaires cover both pre and post-intervention. The data collected from the quantitative method was analyzed using SPSS 21 software. The Cycle 1 intervention has addressed the first and second research objectives. From the study, there are five critical success factors that have been identified for the declaration of project completion for the USP projects. It consists of project mission, client acceptance, monitoring, communication, and management support. In Cycle 2, the data collection was undertaken using qualitative method to address the third research objective. Overall, the result of the interventions undoubtedly has a significant impact on how a project can be managed effectively, specifically for USP projects under the MCMC governance.

ABSTRAK

Kajian ini memberi tumpuan kepada penambahbaikan terhadap pengisytiharan dalam projek Pemberian Perkhidmatan Sejangat (PPS) selepas projek selesai dilaksanakan. PPS di Malaysia adalah suatu inisiatif yang dilakukan oleh Suruhanjaya Komunikasi dan Multimedia Malaysia (SKMM) untuk merapatkan jurang digital di kawasan luar bandar dan pedalaman, terutamanya kawasan-kawasan yang tiada atau kurang menerima liputan perkhidmatan. Terdapat tiga objektif kajian ini (1) untuk mengenalpasti faktor-faktor kejayaan yang penting dalam menguruskan penyerahan pengisytiharan setelah projek selesai dijalankan, (2) untuk melaksanakan intervensi yang dicadangkan untuk mengatasi masalah tersebut, dan (3) untuk melaksanakan intervensi kedua dan mengukur penambahbaikan penyerahan projek PPS. Kajian ini telah dilakukan dengan menggunakan pendekatan kaedah gabungan, iaitu kualitatif dan kuantitatif di dalam dua kitaran kajian tindakan. Dalam Kitaran 1, pengumpulan data bermula dengan kaedah kualitatif, di mana penyelidik telah mengadakan sesi temubual bersama pegawai yang berkenaan. Maklumat yang telah dikumpul telah dianalisis dengan menggunakan perisian NVivo 12 Plus untuk analisis tematik. Selanjutnya untuk kuantitatif, soalan kaji selidik telah diedarkan kepada sejumlah 13 responden untuk mendapatkan maklumbalas mereka. Soalan kaji selidik tersebut merangkumi kedua-dua pra dan pasca-intervensi. Data yang telah dikumpulkan bagi kaedah kuantitatif telah dianalisis dengan menggunakan perisian SPSS 21. Intervensi Kitaran 1 telah mencapai objektif penyelidikan pertama dan kedua. Daripada kajian tersebut, terdapat lima faktor kejayaan kritikal yang telah dikenal pasti untuk pengisytiharan penyiapan projek bagi inisiatif PPS. Ia terdiri daripada misi projek, penerimaan pelanggan, pemantauan, komunikasi, dan sokongan pengurusan. Manakala dalam Kitaran 2, pengumpulan data dilakukan dengan menggunakan kaedah kualitatif untuk mencapai objektif penyelidikan ketiga. Secara keseluruhannya, hasil daripada intervensi kajian ini ternyata memberi kesan yang signifikan terhadap bagaimana sesuatu projek itu dapat diuruskan secara berkesan, khususnya projek PPS yang dikawalselia oleh SKMM.

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LIST OF ABBREVIATIONS

CMA 1998	-	Communications and Multimedia Act 1998
DUSP	-	Designated Universal Service Provider
IRBM	-	Inland Revenue Board of Malaysia
MCMC	-	Malaysian Communications and Multimedia Commission
PPSR	-	Project Progress Summary Report
SAT	-	Site Acceptance Test
USP	-	Universal Service Provision
USPD	-	Universal Service Provision Division
USP Regulations 2002	-	Communications and Multimedia (Universal Service Provision) Regulations 2002

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This research focuses on improving the process of submission for declaration of project completion by the the Designated Universal Service Provider (DUSP) under the Universal Service Provision (USP) projects. The USP promotes the widespread availability and usage of network services and application services throughout Malaysia. This can be achieved by encouraging the installation of network facilities and providing network services in the underserved areas or the underserved groups within the community. This is the gist of the USP framework and how it works in connecting the people in rural and remote to bridge the digital divide.

In a nutshell, the aim of having a USP framework is to find the effective solution by providing communication infrastructure and services. This comprises of tower deployment, fiberisation to premises, and installation of radio transmitters and antenna. In terms of services, it can be for public cellular services such as 2G, 3G, and 4G coverage, and broadband services

The process starts with the Malaysian Communications and Multimedia Commission (MCMC) issue an invitation to all and eligible licensees under the Communications and Multimedia Act (CMA) 1998. The invitation provides information on the description of the scope of work, the procedure for registration of interest, submission of draft plan, and other general terms and conditions. The whole process was typically run by way of tender. The successful licensee(s) will be issued with the Notification of Approval (also refer to as the letter of award) and becomes the DUSP for that particular project

It is an initiative under MCMC, which is a statutory body governed by the MCMC Act 1998. MCMC is the regulator for the communications and multimedia sector in Malaysia. As the regulator, MCMC regulates and develops the communications and multimedia sector in Malaysia, encompassing the telecommunications, broadcasting, postal, and courier services. MCMC also has the responsibility to ensure end-users have access to competitive pricing by the service providers, good quality of services and bridge the digital divide through the USP initiatives. Additionally, MCMC has a role in ensuring that end-users enjoy choice and satisfactory services at an affordable price. This includes handling complaints received from end-users as per the legal remit sets out in the CMA 1998.

The USPD of MCMC plays a critical role in this endeavor. It consists of three departments but only two departments, namely the Planning and Development Department, and the Implementation and Monitoring Department, directly involved in running the USP initiatives. The other department namely the Community Development and Management Department is more focused on community development and programs.

This chapter will cover the subchapter that includes the company's background, problematic situations in the organization, research questions and objectives, the researcher's role, research ethics, the theoretical and practical importance of the proposed research, and the definition of terms

1.2 Case company introduction

From 2002 until today, MCMC has rolled out various projects under the USP initiatives, which were governed pursuant to the USP Regulations 2002. The completed and ongoing USP projects are shown in Table 1.1 below (MCMC, 2020a).

Table 1.1 Initiatives under the USP program

No.	Name of the project	Type of infrastructure deployed	Status in 2019
1.	Community broadband libraries	44 libraries	Completed
2.	Telephony	1,252 units	Completed
3.	Mini community broadband centres	120 centres	Completed
4.	Netbook	1,668,772 units	Completed
5.	Submarine cable system to Sabah and Sarawak	3,819km	Completed
6.	Submarine cable system to the islands	99km	Completed
7.	Community WiFi	1,265 sites	Completed
8.	Internet centres	873 centres	Ongoing
9.	Communications towers	2,046 towers	Ongoing
10.	Upgrading of base stations	5,688 base stations	Ongoing
11.	Fibre optic network expansion	2,406.6km	Ongoing
12.	Rural broadband	146,040 ports	Ongoing
13.	Suburban broadband	31,606 ports	Ongoing
14.	Smart devices with Internet packages	2,498,332 units	Ongoing

1.2.1 External environment analysis

Having the USP initiatives in place provides collective and individual access to basic telephony and Internet services throughout the country. Pursuant to the regulations specified in the USP Regulations 2002, the USP initiatives can only be implemented in underserved areas and underserved groups within the community. The underserved areas and the underserved groups within the community were identified, listed, and published by MCMC via five notifications in 2002, 2004, 2008, 2011, and 2021 (MCMC, 2011). For areas that have not been identified in the notifications, the service providers will cover based on a commercial basis.

In the context of the USP, the underserved areas refer to locations with no or limited coverage i.e. public cellular services or broadband services (both fixed and mobile broadband). Hence, the USP initiatives are planned to bridge the digital divide between rural and remote communities, address coverage issues, and provide the communications infrastructure and digital connectivity platform for the well-being of the people and the progress of the country.

In this endeavor, it is pertinent for MCMC to remain steadfast to the rationale underlying a USP framework in Malaysia. The initiatives undertaken will enable the people in the country, particularly those who live in rural and remote areas, to enjoy high-quality public cellular and broadband services. This will have a significant impact on uplifting lives and improve productivity throughout Malaysia. The analysis can be further described using the PEST (Political, Economy, Social, and Technology) analysis, as follows:

Political factor

For the political factor, MCMC is an organization that directly reports to the Minister of Communications and Multimedia Malaysia. Given the role of communications and multimedia regulator in this country, MCMC has a direct relationship with the strategic planning and blueprint for the communication sector. It also has a direct connection with the structure of Malaysia's government. Usually, when the government or minister changes, the policies and planning also change depending on the new ministers or the new chairman of MCMC.

Economy factor

As the world is changing into a digital nation, it is essential to digitize the Small and Medium Enterprises (SME) in rural and remote areas to diversify and expand their business. The implementation of robust network infrastructure and network service will have a significant impact on the economy. It is estimated that it would contribute up to RM12.7 billion to the Gross Domestic Product (GDP) between 2021 and 2025 (MCMC, 2020b), with an estimated contribution of 22.6% to the GDP (The Edge

Markets, 2021). Under the MyDigital initiative, it is expected to have 500,000 new job creation and assist in transforming 875,000 SMEs to go digital via e-commerce (Tan, 2021).

Social factor

Every day people talk to each other, and most people will use their handphones or broadband if they want to connect wirelessly or online. Implementing the USP projects will enrich the digital-based society and help them stay in touch with families and friends constantly. The USP projects help in addressing complaints on internet speed and public cellular coverage. Additionally, it also aids students to study and get in touch with their school teachers or university lecturers via online platforms for home-based learning.

Technology factor

In terms of technology, there is a rapid change and advancement of devices and equipment. Hence, Malaysians need to leverage digitalization, Industry Revolution 4.0, automation, and artificial intelligence. The USP initiatives provide the network infrastructure and network services for people, especially those in the rural and remote areas, to explore and connect at their fingertips. An example of the requirement set out in the technology factor is to provide an average speed of 30Mbps to the end-user for public cellular services (3G and 4G). Whereas in the recently launched Jalinan Digital Negara (JENDELA) initiative, the requirement for the average speed has been increased to 35Mbps per user. This will be the footprint for Malaysia to move towards 5G services in the next five years. It is also an initiative to support the digital economy and the adoption of future technology. As such, the USP projects must be rolled out faster as it directly impacts end-users.

In conclusion, political unsteadiness, economic change, social needs, and technology evolution significantly impact the initiatives governed under the USP framework.

1.2.2 Internal environment analysis

An internal analysis examines the internal environment such as the management, financial resources, and human resources to assess the competencies and competitive advantage. The assessment of internal environmental analysis will identify the USPD’s strengths and weaknesses. This is as shown in Table 1.2 below.

Table 1.2 Internal strengths and weaknesses

Internal environment factor	Strengths	Weaknesses
Management	<ul style="list-style-type: none"> ● One Head of Division ● Two Head of Departments 	<ul style="list-style-type: none"> ● None
Financial resources	<ul style="list-style-type: none"> ● USP projects are fully funded by the USP Fund 	<ul style="list-style-type: none"> ● Lengthy process for claim verification and disbursement
Human resources	<ul style="list-style-type: none"> ● Mixed working level from Assistant Directors and Deputy Directors as the person in charge 	<ul style="list-style-type: none"> ● Lack of human resources to monitor various on-going projects

1.2.3 SWOT analysis

This research was assessed using Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis for broad understanding. Results of the SWOT analysis are shown in Table 1.3 below.

Table 1.3 SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ● It is a project governed by MCMC as a statutory body for the 	<ul style="list-style-type: none"> ● Different projects have different scopes and targets.

STRENGTHS	WEAKNESSES
<p>communications sector in Malaysia.</p> <ul style="list-style-type: none"> ● It is a government-funded project. Hence funding is not an issue for the DUSP. ● The initiatives are meant for the people in rural and remote areas which have no or insufficient coverage. 	<ul style="list-style-type: none"> ● Payment disbursement took a longer time to verify. ● Lack of manpower in USPD to verify the whole host of on-going projects.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ● MCMC received many complaints about better coverage and connectivity. ● The proposed intervention will benefit the DUSPs in terms of faster project declaration and payment. ● The DUSPs have raised their difficulty and experience using PPSR documents. ● New job creation for the industry such as consultancy services, subcontractors, and supplier of equipment. 	<ul style="list-style-type: none"> ● Change of the direction for project scope of work. ● Change of government because the project planning has a fair bit of influence from the government policies. ● People perceive USP projects are similar to typical construction project. ● Delay in claim verification process and payment.

Based on the SWOT analysis above, there are good strengths for USPD to review the way it manages and monitors the USP project implementation. There is room to improve the internal processes, which will benefit MCMC and the DUSP in a broad picture.

From the opportunities perspective, the COVID-19 pandemic has directly impacted and changed the way people communicate. Hence, the communications sector has become a lot more critical as people demand better connectivity with high quality. Consequently, MCMC will be kept busy planning and implementing new initiatives in addressing the demand.

1.3 Problem Statement

The DUSP is required to submit a Project Progress Summary Report (PPSR) to USPD for verification of the completion of the said milestones before any claims for payment can be made. The PPSR contained project specifications, technical drawing plan, technical report, single-site optimization report, site acceptance test report, and relevant photos. Although each project has different milestones, it has to go through the Site Acceptance Test (SAT) process to ensure that the said site has been built according to the project specifications.

The process requires an officer from USPD or MCMC State Offices to be present at the site together with the DUSP. Both parties are responsible for checking and ensure that the said site has been outfitted according to the project specifications. The officer will check the site readiness based on a Draft Completion Report that the DUSP sent before the SAT exercise. If the officer is satisfied with the site readiness, they will issue an Endorsed Completion Report, indicating that the project is completed according to the project milestone. Together with the Endorsed Completion Report, the DUSP has to submit the PPSR to USPD simultaneously. The PPSR process is supposed to take 30 days. However, the entire process (from end-to-end) took approximately 80 days on average, and can be up to 130 days for sites that require rectification due to defects.

Upon submission of PPSR to USPD, each DUSP was assigned to a specific officer in charge. The officer is responsible for checking and verifying all documents and confirming that the projects have been completed as per project milestones. The officer in charge of USPD has 30 working days to verify each PPSR. Each PPSR will

usually encompass a minimum of one site and up to 20 sites per submission. As the number of submissions was vast and voluminous, it consumed much time to go through each page of the PPSR for verification purposes.

The PPSR documents require signatures from a few personnel, such as the DUSP’s project manager, the USPD officer in charge, the Head of Department, the Head of USP Division, and the Sector Head. Upon approval of all parties, USPD will issue an approval letter to the DUSP to proceed with the claim submission for the respective milestone. Internally, the endorsed PPSR will be sent to the Finance Department for further action.

Since many USP projects run in parallel with different project requirements, the Finance Department takes longer time checking and verifying all claims submitted to MCMC. On average, the process takes about seven months to complete. It can exceed this timeframe to more than one year, depending on the amount and thoroughness of claims to be verified, subject to the complete PPSR submission by the DUSP. In general, the USP projects are valued at millions of Ringgit depending on the total cost approved by MCMC.

1.3.1 Ishikawa (Fish Bone) diagram

In this research, the fishbone diagram or Ishikawa diagram was used to identify the problem using the PPSR. Ishikawa diagram helps to identify, sort, and categorize the root cause of a specific problem (Suarez-Barraza & Rodriquez-Gonzalez, 2019). The root cause analysis from the fishbone diagram is shown in Figure 1.1 below:

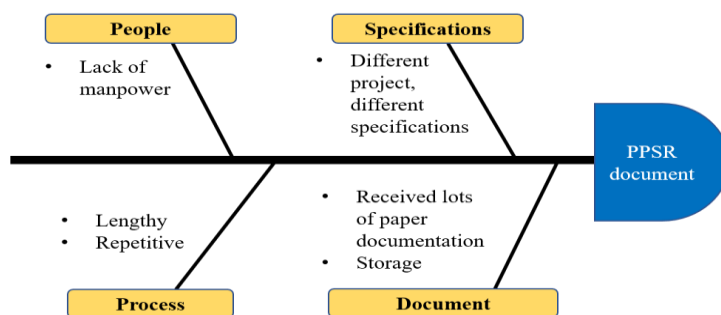


Figure 1.1 Ishikawa diagram

Table 1.4 below explained about the description for each item in the Ishikawa diagram above:

Table 1.4 Description of Ishikawa diagram

No.	Component	Description
1.	People	The SAT process involved a few stakeholders, namely staff from MCMC state offices and USPD, as well as DUSP(s) and its subcontractors. All parties involved in this process will need to get a confirmed date(s) before they can convene at the site(s) for the SAT activities. This activity is the procedure of testing the equipment, such as the tower infrastructure and its ancillaries, to ensure that it is safe and meets the project requirements. As there are hundreds of sites in each USP project, sometimes it takes time to get a confirmed date(s) to conduct the SAT. Additionally, each project requires a different SAT date(s) depending on the completion date.
2.	Specifications	Each USP project has a different type of reporting. For example, a project for the installation and deployment of communications towers will have different specifications and reporting requirements compared to a rural broadband project. This explains why each project has different specifications, which affects the PPSR requirement, as it contains different information and layout of the PPSR documentation.

No.	Component	Description
3.	Process	The officer in charge of USPD has 30 working days to verify each PPSR. Each PPSR will encompass a minimum of one site, and can be up to about twenty sites per submission. Usually, the PPSR submissions to USPD were voluminous. From internal records, USPD received 823 PPSR from July 2019 until July 2020. As the number of submissions was huge, it consumed much time to go through each page of the PPSR for verification purposes. MCMC state offices initially cleared the PPSR, but again it will go through another verification process by USPD – a redundant step involved in this framework.
4.	Document	The PPSR contained lots of physical documentation and reports, printed in the form of a paper-based document. As the number of PPSR increases, the number of paper documents has also increased and consumed space at the workplace, especially when boxes are placed on the floor and block the walkaways. This affects the safety and health of the staff in USPD because the officer in charge will manually handle lots of boxes and thick file folders, which may cause injuries and pain in the hand, wrist, and neck (Ministry of Human Resources, 1996).

In summary, the problem involved in time taken to verify lots of PPSR concurrently, and the massive number of documentations has led to dissatisfaction among the staff. As such, the research was conducted to find the appropriate solution to this problem.

Overall, the existing SAT process was time-consuming. From internal observation, the SAT for a site without defects will take 79 days on average. A site with defects will require further rectification, which results in the SAT cycle being completed in 127 days on average. This delay is often caused by the DUSP requiring

more time to do the rectification work(s) that have been identified during the SAT exercise. Additionally, the delay was caused by the document preparation, which included the conveyance of documents from their state personnel to their headquarters, making relevant copies, and preparing for the PPSR meetings. An overview of the time taken for the SAT in its entirety is shown in Figure 1.2 below.

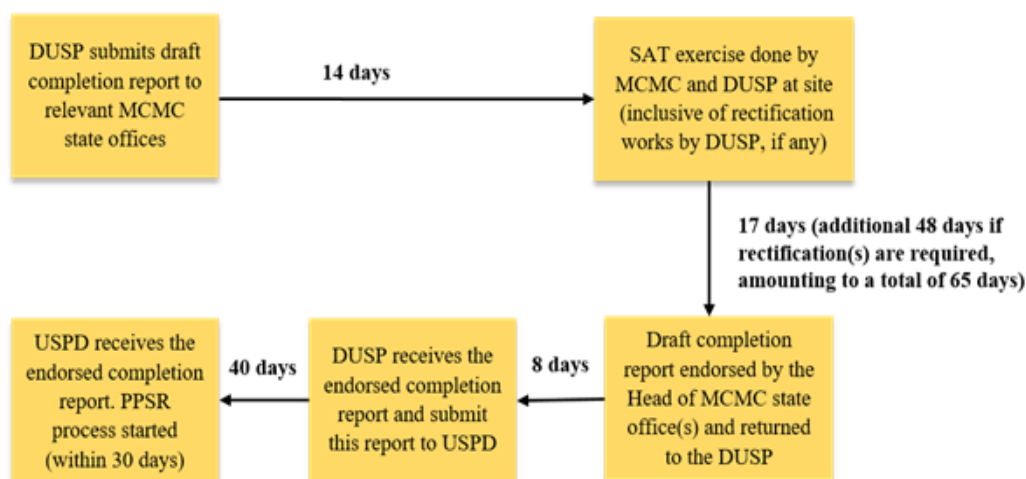


Figure 1.2 Overview of the time taken for SAT process

1.4 Research questions

The research questions have been determined based on the problems as described earlier. As such, the research questions are as follows:

RQ1: What are the critical success factors in managing the submission of project declaration upon project completion in the Universal Service Provision (USP) projects?

RQ2: What is the proposed intervention to overcome the problem and what is the impact of prior and post intervention?

RQ3: What is the second intervention after the implementation of the first intervention and what is the improvement of submission of the Universal Service Provision project completion?

1.5 Research objectives

Based on the research questions above, the research objectives are as follows:

RO1: To identify the critical success factors in managing the submission of project declaration upon project completion in the Universal Service Provision projects.

RO2: To implement the intervention of self-declaration method to manage the submission of the Universal Service Provision project completion, and investigate the impact of prior and post intervention.

RO3: To implement the second intervention of new guideline of self-declaration method and investigate the improvement of submission of the Universal Service Provision project completion.

1.6 Researcher's role

As part of this research activity, the researcher has a role to communicate this research's outcome to MCMC. This will benefit MCMC as the employer because the proposed intervention will have a significant impact to the management of USP projects. The proposed intervention will also benefit the DUSP particularly substantial reduction of paper documentation, faster project declaration, and finally aim for faster claims disbursement.

All of the methodology and approaches here will be undertaken in an utmost professional manner, honesty, and integrity to ensure that the research finding will significantly impact the improvement of USP project management in the future.

1.7 Research ethics

The researcher has communicated the purpose of this research and obtained informed consent from the respondents. Additionally, the researcher maintains the confidentiality of sensitive information—the number of previous and ongoing projects in all public documents from the USP Annual Report. The respondents' names are also put in the initial name to address the respondents' comfort, privacy, and convenience.

1.8 Equation

The research outcome will provide an effective solution to manage the implementation of the USP projects in Malaysia, particularly in managing issues with the project documentation and reporting framework.

1.8.1 Significance to practice

The importance of this research is to aid MCMC in managing its responsibilities as per the CMA 1998. The outcome of this research will support the proposal of having a simplified project declaration upon completion of the scope of work. From another point of view, the USP projects involve a high element of public interest. Usually, USP projects are subsumed in the government's annual budget, particularly communication infrastructure spending and broadband service provisioning. The new approach is expected to facilitate faster claims processing and disbursement to the DUSP. This will address the issue highlighted by the DUSP, where the process of claims disbursement takes a very long time. According to Mohd Badroldin et al. (2016), a payment system is one of the most critical factors towards

the success of a project in Malaysia. They have highlighted that the late payment issue, specifically in Malaysia’s construction industry, had affected the entire project chain, which consisted of the main contractor, subcontractor, supplier, labor contractor, and society. Payment delays could create financial problems, particularly for smaller companies, and establish an unfavorable perception of the government.

The proposed intervention in this research attempts to facilitate and provide a solution for managing the USP project documentation. This research demonstrates the process undertaken to analyze the problem, planning and execution of the proposed intervention, and the impact of post-intervention. The outcome of this research has a significant impact on project management and contributes to creative thinking in finding a relevant and doable solution, given the limitations of the nature of project planning and implementation.

1.9 Definition of terms

The definition of the terms for this research is elaborated in Table 1.5 below.

Table 1.5 Definition of the terms

Term	Definition
Approved Universal Service Plan	This refers to the Draft Universal Service Plan submitted by the licensee before the designation and approved by MCMC.
Critical success factors	This means the key activity required for ensuring success in managing a project. It is related to the completion of project activities based on the terms and conditions of the project, cost, time, quality, and relevant project milestones. For this research, the critical success factors are meant for the declaration of project completion as per milestones.

Term	Definition
DUSP	This refers to the Designated Universal Service Provider designated by MCMC to undertake service provisioning such as public cellular services.
Notification of Approval	This refers to the Letter of Award issued by MCMC to the DUSP pursuant to the CMA 1998. The terms and conditions of the designation and the project specifications are detailed out in the Notification of Approval. As such, the DUSP has to bear a legal obligation to fulfill the requirement set out in the notification, failing which the DUSP may commit a non-compliance, and regulatory action can be taken against it.
Project management	This means applying knowledge, skills, tools, and techniques to meet the project requirement. Under this research, the project management here refers to monitoring and controlling of USP projects in Malaysia.
Self-declaration form	This refers to a declaration made by the Chief Executive Officer (CEO) or a person who holds an equivalent designation in the DUSP that the scope of work has been delivered according to the Approved Universal Service Plan. The self-declaration also will indicate that all information furnished by the DUSP to MCMC in the self-declaration is accurate and true. Under the concept of this self-declaration, the liability will be put under the CEO, who holds the highest-ranking executive of the company. The self-declaration form is part of the Notification of Approval as explained above.

This chapter explained about MCMC, the USP framework governed by MCMC, and the various USP initiatives undertaken for the past 19 years. The Chapter also discussed about the external and internal environment analysis prior to the establishment of problem statement of this research. The chapter continue with the three research questions and the three research objectives, and subsequently discussed about the significant of this research to MCMC.

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