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Original Article

Project Planning as an Instrument for Performance of Universal Service Projects in Kenya

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ABSTRACT

Universal Service Projects are a vital supporter of the availability and accessibility of ICT services in rural, remote, and local income areas of Kenya. Without these projects, millions of unconnected people who reside outside the profit boundary of commercial players will not reap the social and economic benefits brought about by advancements in the ICT sector. To ensure the success of projects, it is paramount for project managers to identify and put more emphasis on planning. Projects usually experience a number of challenges during the planning implementation period, including time and cost overruns, among others. The study objective was to examine the influence of project planning on the performance of universal service projects in selected areas of Kenya. The study was undertaken on the education broadband connectivity project and the voice infrastructure projects undertaken by the Communication Authority of Kenya (CAK). The study was anchored on the theory of change. The target population is 443 respondents, while the sample size is 209 respondents. The study made use of stratified random sampling, simple random sampling, and purposive sampling techniques to select respondents. The study used both the questionnaire and interview schedule. Quantitative data was analysed and presented in percentages, mean and standard deviation and frequencies, respectively, while qualitative data was analysed using common thematic areas. The study found that USF governance project planning activities had a positive influence on project success. The study concluded that USF project planning influences project success. The study recommended that the reporting structure adopted by the Universal Service fund should allow for timely action to be undertaken during planning phases.

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INTRODUCTION

Universal service projects facilitate access to and use of affordable ICTs by the widest number of people. Over time, operators in the ICT sector have increased investments in mobile and fixed networks, more especially in the developing world (International Telecommunication Union, 2015). There has been a significant increase in mobile voice and broadband subscriptions over the last ten (10) years. Unfortunately, these investments are concentrated in towns and urban centres and will likely not expand to connect marginalised populations. This is because of the low-profit potential caused by the high initial capital and operational costs of connecting the regions. Without any incentives, millions of unconnected people who reside outside the profit boundary will not reap the social and economic benefits brought about by advancements in the sector. As noted by Emiliani (2008), access to information is an essential ingredient in serving customer demands, increasing workforce productivity and overall efficiency of operations.

In order for these projects to have the intended impact, there is a need for policymakers to re-examine and redefine planning strategies, focusing on the most relevant factors that are key to the success of such projects. The framework of policies and strategies that govern the implementation of such projects must be sound and clear to be able to act as powerful drivers for the digital agenda of governments. There are plans in virtually all countries of the world to transform their economies into digital or smart economies. In Europe, the move towards an information society has received political backing with the launch of e-Europe 2002, i-2010 and the Europe 2020 strategy, also referred to as the 'Digital Agenda for Europe'. As noted by Muric, Bogojevic and Gospic (2014), the aim of the strategy is to provide access to fast internet and interoperable applications with broadband access for all by 2020. In 2002 the EU parliament issued a directive No. 2002/22/EC on universal service that, among others, provided access to communications services by all in Europe. The EU considers uniform pricing, social tariffs, subsidies, and special tariffs for disadvantaged groups as relevant motivations to support universal services in the region.

The Asia-Pacific region has been touted as a leading example in the implementation of universal services with a greater focus on deploying broadband and wireless infrastructure and services. Cao and Swierczek (2010) identified stakeholder consultations, competent project teams, organisational structure, flexible regulatory frameworks, project characteristics and independent audits as key factors behind the success of universal service projects in the region. Colombia is well recognised as the best case in the development and running of Universal Service Projects. Universal

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service funds needed to implement the projects are fully disbursed annually (ESCAP, 2017). Project failure is experienced in most countries because the Universal Service Fund established is inactive in terms of implementation of projects and disbursement of the funds. A study by LADCOMM Corporation (2013) revealed that 17 countries out of 64 countries surveyed experienced Universal Service Projects success because an active Universal Service Fund was in place. In most of the countries surveyed, the projects experienced project failure. Across the globe, Universal Service Projects in almost 38% of low and middle-income countries are failing to realise this potential (World Wide Web Foundation, 2018). Most of these countries have not established Universal Service and Access Funds and/or if it exists, it is inactive. The failure of these projects can also be attributed to ineffective use and mismanagement, lack of strategic planning, insufficient technical capacity, failures of accountability, lack of stakeholder participation, transparency issues and weakness in Universal Service Fund (USF) governance structures.

The African continent has not been left behind with regard to universal service projects. From a policy perspective, Sub-Saharan Africa (SSA) is one of the leading regions that have most enthusiastically embraced the USF concept, although the same cannot be said regarding the implementation of universal service projects. A study released by Global System for Mobile Communications Association (GSMA) in 2014 indicated that out of 23 countries under study in SSA, only four showed high activity in advancing the objectives of universal service projects (International Telecommunication Union, 2015). The study pointed out a number of issues that hinder such projects, including the structure of the USF fund and its management across Sub Saharan Africa region. According to Ogiemwonyi, Wanjiru and Whalley (2017), the successful implementation of USF projects in Africa faces a number of challenges including lack of accountability, unfavourable government policies, inadequate stakeholder involvement, undue political influence, unavailability of accurate data, and the narrow scope of universal service among others. There is therefore need for urgent reforms and restructuring of the universal service project policies and strategies in the region in order to ensure functional and effective delivery of services to the marginalised, unserved, and underserved populations.

In the last decade, Kenya has achieved significant milestones in the development and use of ICTs. As of November 2019, 94.4% of the population had access to 2G mobile services, while 78% and 37% had access to 3G and 4G services, respectively (Ndung'u, Lewis & Mothobi, 2019). Over time, the ICT sector has implemented several projects with the aim of providing just, reasonable, and affordable services in line with Article 43 of Kenya's Constitution. In the 2019 ICT policy, the Government has committed to ensuring the availability of high-speed internet, affordable ICT devices, and access to appropriate ICT skills to every Kenyan. Universal service obligations are anchored under Section 84J of the Kenya Information and Communications Act, where the Communications Authority of Kenya has been given the mandate to administer the Universal Service Fund (USF). Alfaadel et al. (2012) opine that project success entails delivering input and output objectives with a well-elaborated plan. It comprises meeting time, cost and quality objectives while satisfying the needs of the project stakeholders. According to the World Bank Group (2016), more than 4 billion people have no access to the internet. The majority of the people are found in developing countries, while those who have access to high-speed internet are estimated at 1.1 billion people. Several, Universal Service Funds have been established across the globe at different levels of effectiveness. LADCOMM Corporation (2013) opines that globally, Universal Service Projects are

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still a work in progress and their success rate is very low at 25%.

Universal Service Projects' success factor considered in this study is project planning. Project planning involves the development of a plan that incorporates the specification of resources required and their allocation, the determination of the project end results, solving critical issues and time schedule, among others (Ntuala, 2010). This phase involves project plan documentation, the definition of project requirements and expected outputs, as well as the generation work schedule. Plans developed at this phase guide the project team throughout the entire project life cycle. Project planning in ICT projects helps to establish business requirements, estimate costs, list deliverables, prepare schedules and plan for delivery timelines. It also involves the establishment of resource plans and seeking management approval before moving to the next phase (Dvir, 2005). According to the Universal Fund Service (USF) framework, the Communications Authority of Kenya should prepare a project plan for each project. Project plans should provide information regarding standards to be followed, project requirements, specifications of equipment and service, terms of reference for services offered as well as other commercial terms to ensure that project items are delivered as expected.

Objective of the Paper

To examine the influence of project planning on the performance of universal service projects.

LITERATURE REVIEW

Project planning refers to working out in a broad outline the things that need to be done and the methods for doing them to accomplish the purpose (Project Management Institute, 2014). Naoum (2016) opines that planning is a tool that stakeholders use to ensure that construction projects are successful. Those involved in project management usually prepare project plans so as to aid in the achievement of project objectives. For project planning to realise the intended objectives, it should be done continuously throughout the delivery of a project. It is advocated for because it leads to more successful projects (Wang & Gibson, 2008; Dvir et al., 2003). The nature of resources, processes, and activities involved in projects is usually complex; therefore, there is a need for planning for the projects to be executed on time and at the same time to satisfy the stakeholders' expectations. Poor project planning has led to the failure of projects in the last decade, amounting to a loss of trillions of dollars (PMI, 2014). Zwikael and Globerson (2006) opine that irrespective of the high quality of planning in software and communications organisations, projects' success is still low.

Chan (2013) opines that the project planning process requires that clients' expectations and available resources should be defined first. It should then be matched to set project objectives so that options available are identified, assessed, and the frameworks that are most appropriate are selected. The strategies to be adopted to enhance the achievement of the intended objectives are also selected. Project planning comes to an end when objectives, strategies, and frameworks, among others, are communicated to all the stakeholders involved in project implementation. At the end of the project planning process, project plans are always prepared that are in tandem with the strategies that have been defined in order for the project objectives to be achieved (Zwikael & Globerson, 2006). PMI (2014) opines that the various project plans prepared help in the realisation of specific project objectives. The author further enunciates that sometimes the project plans to delay the delivery time.

According to Hamilton and Gibson (2011), a surge in pre-project planning for construction projects results in a surge in the probability that the project's financial goals shall be met. As noted by Gibson, George and Gebken (2003), effective pre-project planning results in the improvement of project

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success in terms of cost, schedule, and operational characteristics. Project planning constructs considered in the current study are; the level of project estimation, nature of project team set-up, number of project priorities, and nature of technical specifications. Technical specifications are part of the contract documents that are used during the execution of projects. It has an effect on all the phases of the project life cycle. The specifications must be clear, and all the stakeholders should understand them well, as it might lead to projects of high quality.

As noted by Jackson (1990), specifications that are clear and understandable by all stakeholders ease the decision-making process and often result in cordial relationships among the stakeholders. Little is known about how the nature of technical specifications influences the success of Universal Service Projects in Kenya, which the current study seeks to address. Kaming et al. (2007) enunciate that cost overruns are a result of the complexity of the projects. In their study, the authors fail to provide suggestions on how project estimation can be improved so as to avert cost overruns. The authors further opined that the factors that affect cost estimation accuracy are; the experience of an estimator, the completeness of the design and the cost estimation techniques adopted. In Kenya, there are no studies that have been done on Universal Service Projects in Kenya that the current study seeks to address.

Theoretical Framework

One of the theories that guide this study is the theory of change, which was developed by Carol Weiss (1995). It is a theory which explains how a programme or project is initiated with the intention of improving the standards of people in a society (Msila, & Setlhako, 2013). It is a methodology for planning and participation used in institutions to promote social change. This theory came from the field of programme theory and evaluation initiatives that were working for political and social change. It aims at generating new knowledge on whether a certain project is effective or performing to the expectations. The theory explains methods that projects utilise to be efficient and describes designs through which projects are expected to operate, and, lastly, gives the direction of where a particular project is aiming to reach.

The theory of change assumes that there is a required environment for change to happen or that there are underlying resources or conditions that have to occur for the intended change to take place. It also assumes that there are certain risks in all programs that may undermine their success and that there are various initiatives undertaken to ensure project goals and objectives are attained. Universal service projects are initiated to bring change (transformational) (address the communication access challenges in the community). Msila and Setlhako (2013) say that this theory provides a ground for contending that a particular initiative is making a difference in project performance.

The theory of change is significant in this proposal because communities living in marginalised regions of Kenya have struggled for a long due to poor network connectivity. Change here identifies the desired objectives (sustainable ones) and then detracts back from these goals to identify all the situations (output) which need to be considered for the goals to be achieved. These processes can bring desired change when all stakeholders that are directly or indirectly influenced by the programme participate in water project phases like planning activities.

MATERIALS AND METHODS

The study targeted a population of 462 which respondents comprised 150 ICT service providers, 60 head teachers, and 60 ICT teachers from several primary schools around the country, 140 respondents from the health centres in the country, 15 employees from the Ministry of ICT & infrastructure, project office 12 respondents, 5

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national government administration officers and 15 County Ministry of Education officials, and 5 national government ministry of education officials were also considered. A total of twenty-five persons drawn from all categories of respondents above were interviewed. Therefore, the target population of those who were required to fill out the questionnaires is 437 respondents. This study adopted Yamane's sample determination formula to determine the study sample size.

$n = {\mathrm{N}}/{(1 + \mathrm{N}\ (\mathrm{e})^2}$ = 437 / [1+437(0.05)^2] = 209 respondents.

Stratified random sampling, simple random sampling, and purposive sampling techniques were adopted in sample size selection. The target groups are identified using stratified random sampling. These groups are; ICT service providers, Public secondary schools, Health centres, the Governor's office and ICT& infrastructure office, Project office, Provincial administration (Sub-Chiefs), and the Ministry of Education (MoE). Finally, the study used purposive sampling to select the sub-chiefs and the Ministry of Education officials who were interviewed.

The paper adopted structured questionnaires and interviews. Interviews were conducted with the aid of interview schedules. The interview schedules usually aid in the interview process. Pretesting was done in Uasin Gishu County in order to assess both the validity and reliability of the research instrument. The current study adopted content validity.

On the validity of the instrument, the researcher sought the supervisor's guidance and approval on its applicability, appropriateness, and adequacy of the instrument. Cronbach's alpha was adopted to test the reliability of the attitude scale. Before data collection, the researcher first sought an authorisation letter for data collection from the University of Nairobi.

The researcher sought a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). With the help of two research assistants, who were trained in the ethics and creation of rapport with the respondents. Thereafter the researcher, together with the research assistants, administered the questionnaires to the respondents. The respondents were allowed between 8 and 15 minutes to fill out the questionnaires. The data once collected was examined and scrutinised to check if they were duly filled. Those that were duly filled were analysed using descriptive statistics to achieve the objectives of the study. The current study yielded both qualitative and quantitative data. The quantitative data was analysed using SPSS version 25 and the results were presented using absolute and relative (percentages), frequencies, mean and standard deviation. Qualitative data was collected using interviews. The interview results were summarised using common themes.

RESULTS AND DISCUSSIONS

Completion of Universal Service Projects

The results from the study revealed that, of the total respondents, 116(66.3%) disagreed with the statement that Universal Service projects are completed on time because a good regulatory framework is in place, while 38(21.7%) agreed with the statement. Project completion on time was further established to influence project success with *Mean* = 3.4457±1.59603. The findings are in line with the findings of Ho et al. (2009), who found that project completion on time influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement negatively, indicating that Universal Service projects are not completed on time because a good regulatory framework is in place.

Descriptive Statistics for Project Planning on Universal Project Success

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The objective of the study was to examine the influence of project planning activities on the success of Universal Service Projects in Kenya. The study focused on the level of project estimation, nature of project team set-up, number of project priorities, and the nature of technical specification as the main sub-constructs of project planning. The researcher was interested in the opinion of respondents on the extent to which such sub-constructs influence the success of Universal Service Projects in Kenya. The descriptive results of project planning are presented in *Table 1*.

Table 1: Descriptive statistics for Project Planning

Project Planning (n=175)		SA	A	UD	D	SD	Mean	Std. Dev
Projections of costs have been properly done for the project	f	67	28	25	27	28	2.5486	1.5149
	%	38.3	16	14.3	15.4	16		
Task completion times have been clearly illustrated in Gantt charts	f	43	70	27	25	10	2.3657	1.1661
	%	24.6	40	15.4	14.3	5.7		
Estimates of resources need for the project have been effectively done	f	67	28	27	25	28	2.5714	1.5178
	%	38.3	16	15.4	14.3	16		
Projects management team were properly identified and capacitated	f	28	67	27	25	28	2.76	1.326
	%	16	38.3	15.4	14.3	16		
Stakeholders' consultation was done during strategy meetings (planning)	f	52	27	25	28	43	2.9029	1.5781
	%	29.7	15.4	14.3	16	24.6		
Project plan reflects the project objectives	f	28	46	28	42	31	3.3114	1.3645
	%	16	26.3	16	24	17.7		
Technical specifications for project activities were properly done	f	25	64	10	27	49	3.0629	1.4900
	%	14.3	36.6	5.7	15.4	28		
Composite values							2.7118	1.4112

Proper Projection of Project Costs

The study respondents were asked to provide their opinions in regard to whether projections of costs were properly made before project implementation. *Table 1* indicates that the majority of respondents (95, 16.0%) agreed that projections of costs were properly done before the implementation of Universal Service Projects, and 55(31.4%) of the respondents disagreed with the statement. Projections of costs before project implementation were further established to influence the success of Universal Service Projects (*Mean* = 2.5486±1.51494). The findings are in line with the findings of Dvir et al. (2003), who found that proper projections of costs before project implementation influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positive, implying that proper projections of costs before project implementation has a positive influence on the success of Universal Service Projects.

Projects Task Completion Times Well Illustrated in Gantt Charts

In regards to whether the projects task completion times are determined before project execution and mainly shown through Gantt Charts, the majority of the respondents 113(64.6%) agreed with the statement that projects task completion times are determined before project execution, while 35(20.0%) disagreed with the statement. Determination of the project's task completion times before project execution was further established to influence the success of Universal

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Service Projects (*Mean* = 2.3657, *Std Dev.* = 1.16608). The findings are in line with the findings of Zwikael and Globerson (2006) who found that the determination of the project's task completion times before project execution influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positive, indicating that determining project task completion times before project execution is a precursor for the achievement of success of Universal Service Projects.

Estimates of Universal Service Project Resource Needs

In relation to whether the Universal Service Projects resource needs are always estimated before the start of the project execution exercise, 95(54.3%) of the total respondents agreed with the statement that Universal Service Projects resource needs are always estimated before the start of the project execution exercise. 53(30.3%) of them disagreed with the statement. Estimation of the Universal Service Projects resource needs before the start of the project execution exercise was further established to influence the success of Universal Service Projects in Kenya (*Mean* = 2.5714, *Std Dev.*= 1.51782). The findings are in line with the findings of Chan (2013), who found that the estimation of the project's resource needs before the start of the project execution exercise influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positive, implying that estimation of the Universal Service Projects resource needs before the start of the project execution exercise is a precursor for the achievement of success of Universal Service Projects.

Universal Service Projects Management Team Formation and Capacity Building

In a bid to establish whether the project management has put in place a Universal Service Projects management team. The majority of the respondents (95, 54.3%) as per *Table 1* agreed with the statement that the project management has put in place a Universal Service Projects management team, while 53(30.3%) disagreed with the statement. The existence of a Universal Service Projects management team was further established to influence the success of Universal Service Projects in Kenya (*Mean* = 2.7600, *Std Dev.* = 1.32596). The findings are in line with the findings of Hamilton and Gibson (2011), who found that the existence of a project management team influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positive, implying that putting in place a Universal Service Projects management team positively influences the success of Universal Service Projects.

Inclusion of Stakeholders in Planning Strategy Meetings (Feasibility Studies)

The study respondents were requested to give their opinions in regards to whether the project team in place includes stakeholders during strategies planning meetings (especially feasibility studies. The result in *Table 1* indicates that the majority of respondents (79, 45.1%) agreed that the project team in place includes stakeholders in planning meetings. 71(40.6%) of the respondents agreed with the statement. The inclusion of all the stakeholders by the project team in place was further established to influence the success of Universal Service Projects in Kenya (*Mean* = 2.9029, *Std Dev.* = 1.57813). The findings are in line with the findings of Gibson et al. (2003), who found that the inclusion of all the stakeholders by the project team in place influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positive, indicating that the inclusion of stakeholders during initial strategy meetings affected universal project success.

Portfolio Selection

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The study respondents were requested to give their opinions in regard to whether the portfolio that better reflects the project objectives is always selected. *Table 1* indicates that the majority of respondents (74, 42.3%) agreed with the statement that the portfolio that better reflects the project objectives is always selected. 73(41.7%) of the respondents disagreed with the statement. Selection of a portfolio that better reflects the project objectives was further established to influence the success of Universal Service Projects in Kenya (*Mean* = 3.3114, *Std Dev.* = 1.36453). The findings are in line with the findings of Kaming et al. (2007), who found that selection of a portfolio that better reflects the project objectives influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positive, implying that the selection of a portfolio that better reflects the project objectives influences the success of Universal Service Projects.

Technical specifications

The respondents were asked whether the technical specifications provided to clients usually provide how the Universal Service Projects will be used by them; 89 (50.9%) of the total respondents agreed with the statement. 76(43.4%) disagreed with the statement. Technical specifications provided to clients were further established to influence the success of Universal Service Projects in Kenya (*Mean* = 3.0629, *Std Dev.* = 1.49002). The findings are in line with the findings of PMI (2014), who found that the technical specifications provided to clients influence project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positive, implying that the technical specifications provided to clients influence the success of Universal Service Projects.

Performance Details

Out of the total respondents, 112(64.0%) agreed with the statement that the technical specifications provide performance details such as speed. 35(20.0%) disagreed with the statement. These results are presented in *Table 1.* Technical specifications that provide performance details, such as speed, were further established to influence the success of Universal Service Projects in Kenya (*Mean* = 2.1714, *Std Dev.* = 1.33231). The findings are in line with the findings of Wang and Gibson (2008), who found that the technical specifications that provide performance details such as speed, influences project success. The findings of descriptive statistics indicate that majority of respondents rated the statement positively, indicating that technical specifications that provide performance details such as speed have a positive influence on the success of Universal Service Projects.

A ministry of education official revealed that a Universal Service Projects management team is in place that plays a significant role in project execution. Another ministry of education official opined that the Universal Service Projects resource needs are always estimated before the start of the project execution exercise.

CONCLUSION

The study concluded that project planning influences project success. Projections of costs before project implementation have an influence on project success. Projects are successful if project task completion times are determined before the project execution. The projects are successful when the resource needs are estimated before the start of the project execution exercise. The projects are successful when the project management team is in place. Assessment of the Universal Service Projects design completion influences projects' success. Monitoring the time taken to complete each phase influences project success. Assessment of the project's main goal so as to determine whether the main goal has been accomplished influences project success. The number of institutions connected to the internet is an indicator of project success.

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Achievement of expected objectives implies project success. The project documents prepared at the end of the project should provide information in regard to whether project expectations and objectives are intact. Project documents make project tasks traceable. Resolving any issues that arise in the project as per the project documentation prepared at the end of the project influences project success.

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