Enhancing delivery of information technology projects through stakeholder sense-making

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Abstract: The aim of this paper was to examine the applicability of sense-making concepts within the context of stakeholder management in ICT projects in Kenya. The researchers adopted a qualitative approach that triangulates action research design, case-study and grounded theory. A total of 12 senior project management practitioners were identified through non-probability sampling. Conversational semi-structured interviews were carried out, responses were collated and analysed through the NVivo qualitative data analysis framework. It was found that existing stakeholder management and sense-making concepts in ICT project delivery contributes to the accurate identification of stakeholders in ICT projects. It was further found that conceptualisation encourages stakeholder engagement in ICT projects, and enhances the understanding of stakeholder roles in the projects and improves public commitment to stances that are aligned with proffered stakeholders.

Keywords: stakeholder sense-making; communication; risk management; stakeholder management; project delivery; information technology; project management; Kenya; stakeholder integration.

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1   Introduction

Managing projects entails the adoption of strategic procedures through which the implementing team is facilitated to meet the set goals of the project (Svejvig and Andersen, 2015). In itself, the project management concept institutes a number of procedures that are applicable in the realisation of the goals of the projects (Todorović et al., 2015). Project management is therefore viewed as a roadmap from the initiation of the project where the objectives of the project are defined by the project team all the way to the termination of the project including the monitoring and evaluation of the project. From the perspectives of Joslin and Müller (2015), project management is a methodological application of the relevant tools in the advancement of the projects, together with the relevant skills to ensure that the project implementing team achieves the desired objectives of the project. Considering the disclosures of Wellens and Jegers (2014), the management of any project is not an event in itself, but rather a process which begins from the initiation stage, planning, execution and terminates at the project closure.

The project implementation team is obliged to develop practical and relevant management project templates that address the very core issues in the project delivery (An et al., 2015). Optimising the processes involved in the management of projects is paramount in the enhancement of the delivery of projects irrespective of their nature. With the increase in complexities of major projects in the globe, and the increased stakeholder interaction from a global perspective, there is a need to restructure the management models that are adopted by project based organisations in various projects (Joslin and Müller, 2015).

Considering the fact that project management involves the application of various skills and tools in the realisation of specific project policies, it means that the successful completion of any project means there is input from various players within the project delivery structure. The client and project manager assign various activities to various stakeholders who have their unique contribution to the realisation of the project (Hornstein, 2015). In essence, this is an admission that the concept of project management, other than being about the management of the actual project, also entails the management of the various stakeholders who are engaged in the implementation of the project (Todorović et al., 2015).

It is worth noting that stakeholder management identifies the various individuals who are directly or indirectly affected by the project. The stakeholders form the team that directly benefit from the project either directly or indirectly. In fact, Eskerod et al. (2015) developed a stratum of stakeholders outlining the extent to which they are influenced by project activities. In this sense, it is admissible that stakeholders in any project have to be well managed in terms of the creation of 'positive relations' amongst them for the sake of project continuity. Management of stakeholders is a process and requires the development of an elaborate strategy with the sole reason of ensuring that the set objectives of the project are realised. Managing these stakeholders means understanding these stakeholders in terms of their expectations and developing a matrix of operations to manage their expectations of the project as this has a direct influence on the success of the project (Mok et al., 2015).

The concept of sense making in projects is considered a variant of stakeholder management, a critical tool used in the realisation of project aims and goals. The fundamental theoretical concepts of sense making, as a stakeholder management strategy in projects, are based on 'retrospective development' approach where the stakeholders in the project attach meaning to their experiences during the project execution phase. As a management template, decision making ought to shift from the erstwhile modalities to the contemporary models where every decision making is based on the perceived experiences of the stakeholders involved in the process (Abolafia, 2010). The fact is that as

project management principle, the sense making approach is pegged on the idea that the sharing of experiences and the subsequent collaboration that accompanies the sense making activity essentially enhances the decision making in an organisation by building a 'robustly networked' team (Maitlis and Christianson, 2014). The fact that projects are gradually becoming more and more complex means that rational strategies are required to enhance the decision-making approaches in these projects. It follows that a more practical decision-making approach is required and this can be well achieved through the adoption of the stakeholder sense-making models in project management (Maitlis and Christianson, 2014). Hence this study, focused on examining the applicability of sense-making within the context of stakeholder management in ICT projects in Kenya. In theory, the fact that this study evaluates the modalities through which ICT projects can be enhanced through the sense-making concepts means that the research contributes to the growing literature of stakeholder engagement. As earlier intimated, the sense-making approach is retroactive and this means that the research aimed to lay down a theoretical foundation onto which stakeholder integration could be undertaken within the context of sense-making. The paper is structured as follows: the next section theorises ICT project delivery in Kenya. This is followed by an appraisal of the research method, results and conclusion.

2 Theoretical foundations

2.1 ICT project delivery

A recent survey by Clarion Consulting Group, one of the leading project management specialists suggested that many companies are still struggling with the delivery of ICT projects (Ma et al., 2018). This disclosure is corroborated by a number of studies such as Böhm and Motschnig-Pitrik (2015) which suggested that timely project delivery and sustainability still provide a very huge challenge in a number of ICT mega projects. Issues to do with project variations and stakeholder management, according to the study by the Clarion consulting group are still considered as some of the leading gaps in project delivery in the ICT industry (vom Brocke and Lippe, 2015). From a global perspective, one would thus argue that challenges in the ICT project delivery centre on insufficient, or lack of, application of a defined principle of managing the various aspects of these projects including stakeholder management (Walker, 2016).

There is evidently a failure by many actors in the ICT sector, to develop a model for harnessing the potent of stakeholder management with a view to realising the project objectives. In a systematic literature review regarding project management and delivery in ICT, Silvius and Schipper (2014) suggested that the core of project management in the ICT industry has to be on the stakeholder management. In fact, this assertion is affirmed by the theoretical models suggested by Kaczorowska et al.

(2014) to the effect that organisations must seek for avenues of creating values through stakeholder engagement, an assertion that the wealth of experience of stakeholders in any project have to be tapped to contribute to the project success.

The work by Shenhar (2011) found that most projects today in the ICT sector tend to be complex, uncertain, non-linear and quickly changing and this compounds the project delivery model in the current project management framework. The studies by Haselberger (2016) further claimed that the nature of ICT projects in the globe today requires a more robust management template riveted towards stakeholder management since these projects are fast changing. What these studies tend to suggest is that the development of a framework for managing these ICT projects, has to place stakeholder management as the pillar of these models. In a sense, these studies are propagating the idea that the project delivery model for any ICT project is entirely hinged on stakeholders (Too and Weaver, 2014).

Two critical issues arise in the evaluation of the current issues in ICT project delivery from a global perspective: one is that the cardinal focus of any project delivery model has to be focusing on the management of stakeholders and this is where the theoretical precincts of sense-making apply. Enhancing project delivery in any organisation has to be founded on the ability of the project to effectively manage their stakeholders. Managing key stakeholders in any project, on the other hand, entails the development of the expectations from the stakeholders to which this research study is based on.

2.2 ICT project delivery in Kenya

Kenya is leveraging on the ICT sector as a pillar of the development of the economy (Tarus et al., 2015). In all its developmental blueprints, the country identifies the ICT sector as the driver and this has seen a surge in the investment of the country in various ICT infrastructures to support growth. Despite the emphasis that the country has put in ICT as a factor of its economic progress, there seems to be no project delivery framework aimed at optimising or creating value of these projects in the country (Ndegwa et al., 2017).

A number of research studies evaluating the status of project delivery in Kenya with emphasis in the ICT sector in Kenya depict the situation as in dire need of urgent restructuring. In fact, a study by Tarus et al. (2015) suggested that the country lacks a systematic framework not only for the delivery of ICT projects, but the overall management of these projects. The sustainability of the ICT projects in Kenya is not yet considered to be very established considering that there is no established framework for this in the country (Okeyo and Kioko, 2016). Wamoto (2015) specifically points to issues of project sustainability in the delivery of ICT projects in Kenya. There are concerns that the extent of stakeholder engagement in majority of the government projects is not

adequate enough to ensure that the sustainability of these projects is guaranteed.

Kimani (2017) posits that there is no elaborate stakeholder management scaffold in the ICT projects in Kenya. The implementation process of these projects tends to ignore the input of some of the important stakeholders in the projects thus limiting the value of these projects in the country. Wamoto (2015) is however quick to admit that this problem has been majorly noted to be prominent in the government-controlled projects, an admission that means that a policy guideline ought to be developed through which a structured stakeholder engagement is conceptualised to enhance the delivery of these projects.

The assertions by Tabira and Otieno (2017) regarding project delivery in Kenya affirm that any attempts of enhancing these projects have to be founded on stakeholder management. There is evidence in the assertions by Wamoto (2015) and Kariungi (2014) that the weakest link in project delivery in the ICT sector in Kenya could be the management of various stakeholders, their expectations and the development of a seamless working synergy for the benefit of the organisation. Okeyo and Kioko (2016) proposed that attempts to develop a working model for project delivery in Kenya must have their origin in the management of the various players in the sector. These findings give the impression that the project management model in Kenya (ICT sector to be precise) is not predicated on a structured template of stakeholder management. What this therefore means is that in developing a strategy for enhancing the delivery of projects in Kenya, one has to rivet its focus on issues related to stakeholder management and this is where the proposal of stakeholder sense-making, theorised in this paper seems to be generated. Seboru et al. (2016) suggested that the conceptualisation of any ICT project in Kenya ought to be anchored on a firm foundation of stakeholder engagement. A well-conceived project delivery model, as suggested by Njoroge et al. (2017) has to be cognisant of the need to incorporate all the stakeholders and this can be adequately done through the stakeholder sense making concept. It is perceived that the theoretical model of the stakeholder sense-making approach provides a very critical foundation onto which project stakeholders are engaged in the delivery of the project. Summarily, the reviewed literature on ICT project delivery in Kenya reveals that there is need for the development of a framework onto which the stakeholders in any project can be adequately engaged in the project. The adoption of a sense-making model thus seeks to bridge the gap in the engagement of stakeholders in the delivery of the projects.

2.3   Theorising sense-making

Maitlis (2005) contends that sense-making is the process through which individuals develop an image or a concept of what happens in their surroundings. The iterative procedure, as advanced by Basu and Palazzo (2008), is hinged on the collaboration of actors in a project are capable of sharing their experiences or awareness for that matter. The potential of this methodology in the improvement of the project

outcomes, as has been documented by Basu and Palazzo (2008). The fact that sense-making perceives organisations as variables and 'multiple representations of reality' gives the actors a chance to have a more rational approach in the delivery of the project. As a concept in project management, the stakeholder sense-making is pegged on a number of attributes (see Figure 1):

- *Identification*: The sense-making model relies on the identification of the actors in the sense that whoever the actors think they are within the context of the project has immense implications on the manner in which they perceive the project. Within the context of this study, it is imperative that the stakeholders in a specific ICT projects have a clear perception of who they are within the context of the project. This is likely to inform their approach in the project because the manner in which they regard themselves really shape the modalities through which they interpret data and even the enactment of the data as well (Ochieng et al., 2017).

- The sense-making model is retrospective inferring that actors in the project 'reflect' on the progression of the project. It is based on this idea of retrospection that Ochieng et al. (2017) opined that the point of retrospection at any moment during the project delivery has immense influence on the details that the actors are capable of seeing. This in essence means that the actors have to be cognisant of even the finest details in the project because upon reflection, these details are essential in making any meaningful decision regarding the project.

- De Jaegher and Schiavio (2017) talk of the sociological foundation of sense-making in the sense that actors are engaged in a framework of sharing experiences and knowledge gives the sense-making approach a sociological approach. According to Ochieng et al. (2017), the sharing platform offers the stakeholders in a project a chance to share reasonable data and information regarding the project. This gives the project implementers an opportunity to assess the progress of the project.

- Sense-making is progressive, meaning that as the project continues, the actors are able to have a reflection on the progress of the project and share their experiences. This effectively aims to enhance the quality of the project even as it progresses.

- The formation of cues from the context of the project is critical in the enhancement of the project quality. The fact that the stakeholders are capable of extracting cues from the project delivery context means that the decision-making process of the project is quite detailed.

The disclosures by Van den Bos and Lind (2013) to the effect that there is need for organisations to be able to achieve what is referred to as a 'congruent' state where individuals are capable of making "the right choices for coordination seems to advance the significance of sense-

making in project delivery (Al-Ani et al., 2016, p.4), proposed that the net implication is that the coordination efforts in the project are immensely improved through the sense-making approach. Maitlis (2005) further indicates that sense-making in organisations is first concerned with the question of how some things become events for stakeholders in the organisation. In essence, this means that an event is talked into existence which is a suggestion that an event does not exist unless the project stakeholders are able to identify its existence and further discuss the event.

**Figure 1** Stakeholder integration through sense-making
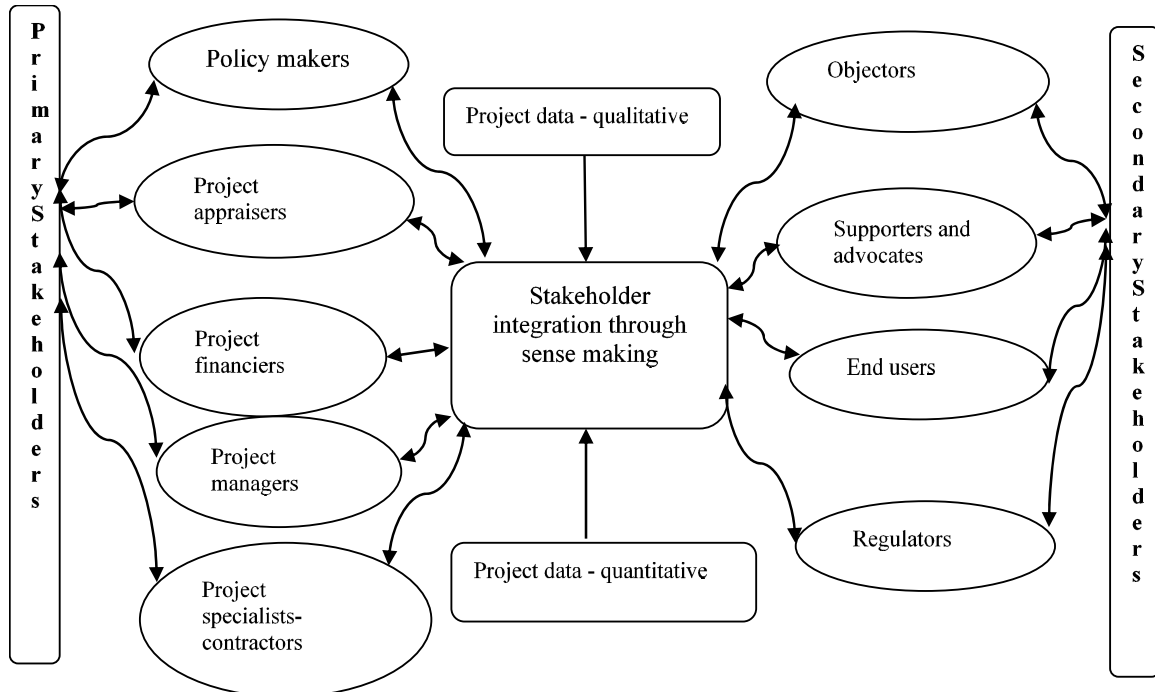
Source: Ochieng et al. (2017)

Mindfulness is essentially the interrelations amongst the various processes of cognitions and perceptions. The relevance of mindfulness, as a factor in sense-making is notable through the concept of awareness so that an individual can only be able to formulate what ought to be done in a project if he or she is entirely mindful or aware of the project and this comes through the individual's cognition regarding the project and the perceptions of the individual regarding the project. Mindfulness can lead to a rich awareness and thus enhance the capacity for action in the project management.

The enhancement of project delivery through sense-making approach is very generic. Conventionally, sense-making approaches in projects enhance the delivery of projects. The proposed study seeks to avoid the generalisation of the study by viewing the concept of sense-making from a stakeholder engagement viewpoint. This was based on the works of Okeyo (2017) that identified stakeholder engagement as one of the most urgent problems facing ICT project delivery in Kenya. Figure 2 outlines the adopted conceptual framework. Through a sense-making model, project implementers are capable of effectively managing and engaging the various project stakeholders in the project. As illustrated in Figure 2, whether the government funded projects, privately funded projects or the PPP project financing model, the stakeholder sense-making provides a framework through which the

management team can effectively manage their teams. Effective management comes through the improvement of the communication model in the project, building meaningful relations amongst the various stakeholders in the project and the conceptualisation of a risk management framework for the project (see Figure 2).

Figure 2 Study conceptual framework
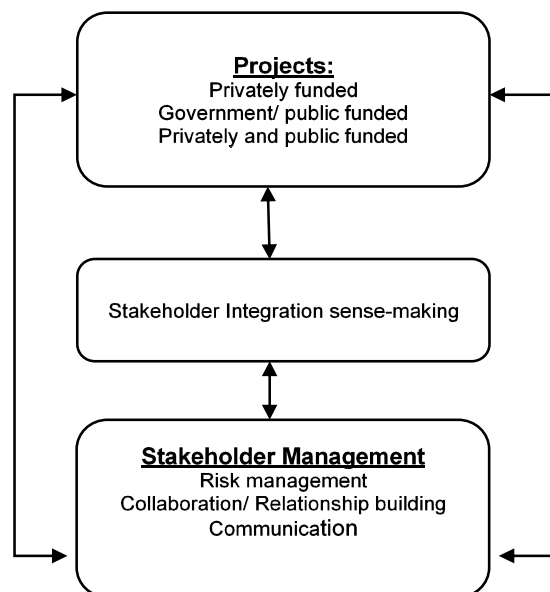
3   Method

The development of an effective framework for enhancing ICT project delivery based on the sense-making approach took into consideration a number of factors. One notable consideration was that the concept of sense-making, from a very broad perspective, obviously enhances the delivery of projects. To avoid the generalisation of the study, the research evaluated the implications of sense-making from the point of view of stakeholder management. From the dispositions of Ngacho and Das (2014), one of the most notable issues in the ICT project delivery in Kenya was stakeholder management and engagement, therefore, the study aimed to propose a framework for the enhancement of ICT project delivery from the point of view of stakeholder management and engagement. As summarised below, qualitative method was adopted in the study.

3.1   Case review

To develop a framework for enhancing the outcome of ICT projects, a methodological approach that aimed to examine in detail the current operational model of the actors ought to be taken into consideration. Based on this, the research was keen on adopting a case study design to validate the collected information regarding sense-making and project delivery in the ICT sector. To have a broader perspective of the study, the proposed research was inclusive as possible so that the case studies reviewed were including those projects that are entirely funded by the government, the privately funded projects and those that are based on the public-private partnership model.

- Project (A) a government funded ICT project was evaluated. Project (A) was established in 1999 aimed at providing a platform for the research through the provision of internet amongst other sources. The fact that it is entirely a government project makes it a very important consideration in this research study since it is crucial in the revelation of project delivery by the government.

- Project (B) aimed at ensuring that all cities in Kenya are connected through the internet thus easing communication amongst these cities. The project was a public-private approach where the Chinese government would fund the initiative, the Kenyan government, through other entities such as Telkom Kenya, would be assisting in the operations and the maintenance of the initiative. Other players such as Huawei were to setup the infrastructure.

- Project (C), a privately funded project, facilitated the establishment of the under-sea cable infrastructure that linked West Africa to East Africa and even into Europe. The study of this project gives detailed information on the vagaries of project delivery for privately funded project and the modalities through which a stakeholder sense-making approach would enhance the delivery of these projects.

3.2   Data collection and analysis

Semi-structured interviews were employed in this study. The dispositions of Kumar (2014) suggest that the semi-structured interviews provide rich data collection that allows for clarification and further expansion of the research questions during the interview session. This, in essence, enhanced the internal validity of the research study. The issue of the confidentiality in the research study was minimised considering the fact that the authors had an agreement regarding prior access. As summarised in Table 1, four senior executives from each of the projects identified above were purposely selected for semi-structured interview sessions. Structured interview questions were based on the sense-making as stakeholder management modalities. The inclusion criteria for the participants in the study were based on their level of management in the various projects that were identified for the research study. At the same time, the experience as managers in the project was taken into consideration and five years selected to be the base number of years that were to be considered as the experience duration in the selected research project.

Table 1   Participant inclusion framework

Level of management in the project	Senior executives
Number of years of experience in ICT project management	5 years and above

3.3   Inclusion criterion

Purposive sampling was adopted in consideration of the fact that the adopted inclusion criteria in the study would exclude a significant number of respondents. Through referrals, the respondents were identified and contacted through the phone to setup an interview session. A consensus form detailing terms and conditions of the study was sent to the participants identified to acquaint themselves with the interview session and upon appending their signature on the form, an interview session was arranged. A total of 12 participants were included in the research study. Table 2 shows the interviewees and their profile within the selected projects and their years of experience. The table also gives a summary of the status of the projects selected for the study and the financial costs of the project as well.

Key thematic areas in the interview session were on the overall implications of sense making approaches in project management within the context of project communication, relationship building, risk management and consultation. Interview sessions were undertaken separately in consideration of the suggestions of Liamputtong (2018) to the effect that it improves the quality of the responses of the participants and also enhances the confidentiality of the participants in the research study. Thematic and cluster analysis were undertaken to explore the key thematic areas of the responses within the larger framework of the four critical areas of focus – communication, risk management, consultation and relationship building in project delivery.

3.4 Data collection tools

The conceptualisation of the interview questions, as earlier mentioned, was premised on the theoretical precincts of stakeholder engagement. This was conceived on the idea that one of the major issues in ICT project delivery in Kenya is stakeholder management and engagement. Therefore, the proposal of sense-making approach in the delivery of ICT projects in Kenya was based on the fact that stakeholder sense-making is a principle of project engagement. The principal focus of the proposed research questions this study endeavoured to test the following:

- *Communication*: Stakeholder sense-making can be viewed from the perspective of communication. The data collection tool sought to review the modalities through which stakeholder sense-making, as a tool of communication, can be used to enhance the project delivery in the ICT sector in Kenya.

- *Consultation*: As earlier noted, the retrospective aspect in sense-making is meant to empower actors in a project to enhance the quality of decision making. In this regard, the data collection tool explored the manner in which stakeholder sense-making, as a platform for consultation can be employed in the enhancement of project delivery in Kenya.

- *Planning and relationship building*: To what extent does stakeholder sense-making aid in the planning and building of important relationships in the project delivery process? The interview explored the nexus between sense-making, as stakeholder engagement model, in building relationships and planning of projects.

- *Risk management*: Could sense-making provide a platform for managing risks in projects? As a stakeholder engagement template, the interview explored the extent to which various risks in ICT project delivery in Kenya can be addressed through the sense-making model.

3.5 Research framework

The study followed the research framework proposed by Chileshe et al. (2016). In this template, relevant literature was reviewed to develop the theoretical foundation of sense making theory in relation to project delivery. The subsequent phase entailed the development of the data analysis model from where the emergent themes from the semi-structured interview sessions were identified the potential themes were reviewed, named and the patterns used in conjunction with the research objectives to analyse the data obtained. The adoption of the NVivo content analysis tool was in consideration of the fact that it enhances the rigour of the data analysis procedure through cluster analysis by visualising the patterns in the data and making the relevant inferences in the data. Based on the suggestions of Gibbs (2002), cluster analysis provides with a foundational scaffold onto which the researcher can

undertake 'cross-validation' of the collected data as a way of identifying the reliable data structure for the study (Kumar, 2014).

Figure 3 outlines the research methodology adopted in the study. The review of secondary materials to build a theoretical framework for the study was undertaken in the initial step. Step 2 of the research study focused on the collection of primary data and this entails the adoption of semi-structured interview sessions. The semi-structured interview process was validated through clustering and content assessment. Consequently, qualitative analysis was used to identify the trends in the themes and discover the salient themes that are predominant in these responses.

Table 2 Interviewees and project profile

| Participants	Sector	Current job	No. of years worked in sector	No. of years managed projects	Role and responsibility
1	ICT	Chief technical officer	18	10	Planning
2	ICT	Project manager	7	4	Managing projects
3	ICT	Communication manager	10	6	Coordinating projects
4	ICT	Project appraiser	12	8	Managing projects
5	ICT	Senior project manager	16	9	Managing projects
6	ICT	Senior network engineer	22	7	Planning
7	ICT	Chief technical officer	12	6	Planning
8	ICT	ICT director	10	8	Planning
9	ICT	Project manager	10	8	Managing projects
10	ICT	Senior manager	12	6	Managing Projects
11	ICT	Head of specialist contractor	15	8	Coordinating projects
12	ICT	Project lead	17	7	Managing projects

Even though the NVivo platform was used in the data analysis, the literature review adopted the use of various secondary materials such as government reports and websites to build a case for the relevance of sense making approaches in ICT project delivery in Kenya. At the same time, the fact that a quasi-case study was employed in the research study effectively assisted in the triangulation of the qualitative data collected from the identified research participants. The adoption of the secondary materials through the case study approach, in itself, aided in the enhancement of the internal validity of the research study.

Issues of reliability and validity of the research instruments are quite significant in any scientific inquiry (Krosnick, 2018). Moreover, as Delshad et al. (2015)

suggest, reliable tools of data collection are considered to be guarantees of the outcome of the studies undertaken. The study was keen on minimising the possibility of bias in the study that would otherwise limit the validity of the outcome of the study. One notable approach that the research espoused is to seek for clarification during the interview session. It was important that the open ended questions are discussed exhaustively to ensure that any sort

of misunderstanding in the process is eliminated. The interviewer, as discussed by Golafshani (2003), has to be fully convinced that the questions asked during the research process are well answered and no grey area exists as pertaining to the research questions (Delshad et al., 2015). These clarifications are not only to limit any form of misunderstanding, but also effectively to address the issue of misperceptions on the side of the interviewer.

Figure 3   The research framework
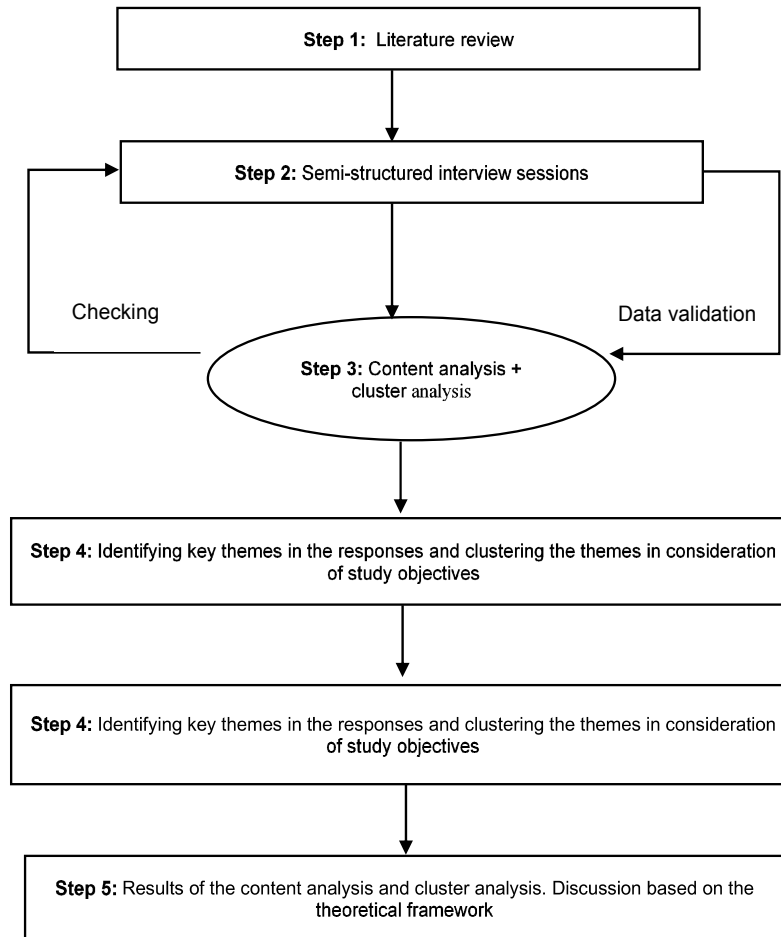
Source: Chileshe et al. (2016)

To enhance the reliability of the data collection tools, the framing of the questions that Golafshani (2003) spoke of was undertaken very meticulously. Delshad et al. (2015) noted that the manner in which any interview question is framed fundamentally influences the consistency of the tool. The interview questions, according to Krosnick (2018), ought not to lead the interviewer as this is likely to interfere with the ability of the tool for collecting data to remain consistent. In this regard, the developed interview questions were framed objectively with very deliberate efforts not to introduce newer concepts to the question that would be leading the respondents. This was considered to be a very important foundation for ensuring that the data collected were within the reliability scale conceived by the research team (Golafshani, 2003). The next section summarises the key findings of the study.

4   Findings

This section discusses the results generated from the interviews by offering new insights into the concept of stakeholder sense-making as a factor that influences the delivery of ICT projects. The initial analysis of the 12 participants in the study generated up to 400 codes. Twelve sub-themes equally emerged in the results even though further adjustments to the analysis process by restructuring the thematic analysis yielded eight sub themes in the study. The study combined a number of suggestions by Chileshe et al. (2016) to narrow down to the salient themes that emerged in the study by clustering the codes that seemed to be similar to bring about a coherent data pattern relevant to the identified study objectives. Drawing from the experiences and the beliefs of the participants in the study,

four themes emerge as critical aspects of sense making that were critical to the delivery of any project. These entail the following.

Theme 1: Risk management

Effective stakeholder management principles inherently lower the risk factors that are likely to be experienced in any project lifecycle. Based on the perceptions of the interviewees, a robust stakeholder management framework, by the very fact that it integrates the input of various classes of the stakeholders in the project, gives the project delivery team an opportunity to seal the loopholes that may expose the project to a number of risks. There is a sense in which a deeper and effective understanding of unknowables within the project risk management activities is founded on identity and what (Bryman and Bell, 2015) refers to as 'ontological dimension' of the sense maker in the project. From a general perspective, there is a sense in which any risk assessment procedure has to espouse sense makers to be able to deal with known and the unknowns through the process of sense making.

In practice, the identification of risks associated with projects means that the expertise of the risk managers, coupled with their judgement regarding the situation, is applied. What this means is that risk management team has to be able to interpret information regarding the performance of the organisation and develop a risk assessment for the organisation. At the same time, a systematic analysis of the risk portfolio of a project would entirely rely on the perception of the risk analysis team owing to their wealth of experiences in risk analysis. The observation of the interviewees is that the concept of organisational sense making offers the risk management teams the ability to make meanings of ambiguous situations

in the project delivery lifecycle and this essentially lowers the level of risk in the project.

Participants tended to believe that the moments of introspection by stakeholders of various classes in a project, essentially offers the stakeholders a chance to make meaning out of the progress of the project. In essence, there is a chance that the development of a framework in which the stakeholders would be giving meaning to various project variables would then give the delivery team a lens through which they view the hidden project risks. Table 3 gives a glimpse of the feelings of the identified research participants in regard to stakeholder sense making as a tool for managing risks. The process of sense making, as perceived by the participants, essentially unfolds whenever the stakeholders in the project delivery team are capable of actively identifying, and subsequently selects various cues within the project delivery situation and this is further achieved when the stakeholders relate these cues with the broader reference frames and thereby creating a plausible account that is capable of informing an action. To the participants, the organisational sense making process is critical for the employees to really identify the latent risks, interpret these risks and develop remedies.

Within the context of this research, the participants suggested that the sense making approach, as a management tool for the stakeholders, offers the project team a very strong foundation through which they – the project team, can be able to not only understand, but also interpret risks during the delivery of the project. Broader cues are developed and simulated by the project execution team yet this is essential in giving the project team an opportunity not only to bracket, but also to extract specific features of the project, a factor that helps in understanding risk and managing them effectively.

Table 3 Data extracts on risk management and stakeholder sense making

Sub-theme	Code	Code	Code
Frequency 29.22%	*Risk profiling*	*Evaluating past remedies*	*Eliminate ambiguity*
Sense-making makes project cues clearer thus gives the implementation process a clear picture of the risks expected/ encountered already	Through sense-making, a clear risk structure of the project is obtained to enhance the risk remedy approaches	Evaluation of the past project delivery process in terms of risks is made possible through the sense-making approach	Abstract issues in the project delivery lifecycle reflected upon by the delivery team thus avoiding risks

Table 4 Data extracts on risk management and stakeholder sense making

Sub-theme	Code	Code	Code
Frequency 17.25%	*Interpreting project obstacles*	*Risk prioritisation*	*Risk categories*
Risk interpretation enabled stakeholders to define various obstacles anticipated in the project in consideration of their project interests	Stakeholders in the project have a broader understanding of various project risks and are capable of brainstorming	Clustering risks or risk segmentation procedure can be developed through sense making to enable the project delivery to prioritise the risks	Reflect on the categories of risks; build consensus on how to overcome the project risks

Risk communication, as a subset of risk management, comes out as a critical component of risk management that is influenced by the sense making theory. Table 4 gives an indication of the effect that risk management is an important

consideration in the project implementation success. Having all the stakeholders in the project converse on the project risks set up a very effective platform through which the project risks can be well managed. The participants agreed

that risk communication is an elemental component of risk management and this is subject to the understanding of the various risk portfolios in the project being implemented. In this consideration, the sense making of the project risks offer the stakeholders a chance to integrate their ideas regarding the risks identified, profile these risks and build a consensual framework of managing these risks during the project delivery.

Theme 2: Collaborations or relationship building

Although there are different many other avenues of developing a collaborative approach in project delivery, there is a sense in which the stakeholder sense making approaches in project delivery provide a framework for building relevant relationships to advance the project goals. The reflections of the participants are to the effect that the very foundational philosophy of sense making theoretical framework is to cement relationships through a communication framework. Indeed, the participants in the study were of the idea that the fact that the sense making approach gives the various clusters of stakeholders in the project an opportunity to engage in a reflection helps the stakeholders to develop some sense of connection not only to the project, but also amongst themselves.

In the event that the stakeholders in the project have a forum where their collective experiences are being interrogated, as suggested by the participants, they are capable of having a moment to rationalise regarding the modalities through which they are able to further give their input in the project to improve outcome. Indeed, there is a sense in which sense making theory is considered a social activity. There is a sense in which the congruence of the primary stakeholders, together with the other classes of stakeholder enriches the projects with a very effective platform through which they can build stronger relationships in pursuing the objectives of these projects.

Table 5   Data extracts on stakeholder collaboration/relationship building and stakeholder sense making

Sub-theme	Code	Code	Code
Frequency 14.35%	Improving networking	Enhancing consultation	Sharing experiences
Collaboration and relationship building	Provision of a forum where the various classes of stakeholders are consistently engaged in reflecting on the project progress	Improvement of the chain of communication between the various clusters of project stakeholders enhances the consultative model of the project	Experiences shared motive project delivery team

Developing a platform of engaging the key stakeholders in government funded projects seems to be a key priority area of concern for the participants. A stakeholder engagement and inclusion template is non-existent leaving a singular class of stakeholders to make decisions for the projects, a fact that exposes these projects to a number of delivery risks including the project sustainability. In line with the experiences of the managers in the implementation and delivery of the government projects, the participants were able to identify two modalities through which stakeholder sense making have been able to enhance the project collaborative model in delivery of projects:

- Linking various stakeholders together and integrating their ideas to further the pursuance of the project goals. In specific to government projects, there are very weak stakeholder integration structures; an issue that means that the very fabrics of the government facilitated projects are very weak. Therefore, a framework for bringing the stakeholders – all the classes in a forum cements the collaboration approach required of delivery of projects.

- Sharing of stories or experiences is a fundamental fabric for networking or developing a collaborating framework for the delivery of projects. A concise sense making model that engages all the stakeholders in the project seem to be setting up a foundation where the stakeholders identify various project issues to deliberate. This should enhance the relationship building aspect of stakeholder sense making.

The level of community engagement determines the sustainability of the project in consideration of the opinions of the participants. As highlighted in Table 5, stakeholder collaboration and relationship building is key in enhancing project outcomes. The sense making approach that the project delivery team adopts ought to find a modality through which the local community – primary consumers of the projects, are engaged in the process as well. The project managers opine that as the project progresses, there is need to incorporate the community at every stage because they are the primary consumers of these projects. In view of this, the participants in the study were of the opinion that the sense making approaches, in the context of relationship buildings for the sake of improving the project outcomes, have to be cognizant of the need to incorporate the community in the process as well.

Theme 3: Communication

The communication flow within all stakeholders in the project delivery team has to be consistently improved as per the suggestions of the project management team interviewed. The improvement of the communication model is not only based on the aspect of timeliness of the information, but is equally hinged on a number of other factors such as the quality of the communication as well. The interest of the project delivery team is to have a channel through which the correct information can be translocate from one end to the other (Ochieng and Price, 2009). The development of a stakeholder sense-making model integrates a number of aspects of communication together to

aid in the development of a high-quality content that would be used in order to enable the projects realise their set objectives. A sense-making model, by all means, has to give all the stakeholders in the project delivery team the assurance that there is a possibility in the project delivery process, to implement various communication systems that directly respond to the needs of the stakeholders in the delivery of the project. The very structural model of the sense-making approach fundamentally improves the communication structure within the project delivery team and thus opening avenues through which the project team can further improve the project outcomes.

Within any project implementation and delivery framework, it is possible for all the classes of the stakeholders in the project to be able to interrogate the quality of information structures it has established and perhaps have a moment of implementing those communication systems that can enable the relevant stakeholders in the study to pursue the vision and the objectives of the organisation. Sense-making, in its very own nature, inspires the relevant stakeholders in project management to develop communication based-methodological approaches that are relevant in the pursuance of the project goals and deliverables. Moreover, it has been elucidated that the basic threads of stakeholder sense-making in any project delivery, within the context of communication advancements in the project, have to be based on having conversations regarding the progress of the projects. Perhaps this is the most important nexus between communication, as an aspect of project delivery, and sense making as a tool for enhancing project delivery. Participants interviewed in this study were of the opinion that the whole essence of sense making in project delivery is to advance conversations regarding the project progress in terms of the challenges faced during the implementation, opportunities for enhancing the output or even the progression of the project in general.

The element of conversing between the stakeholders in the project is interlinked with the sense making in that the stakeholders can continuously look back in retrospect and review the performance of the project, make the past clearer and develop structural measures of addressing the progress of the project based on the performance of the project in the past. Deliberate efforts by the project management team to enhance sense making as a tool in project delivery are thus meant to improve a number of communication variables in the project. The beliefs of the project managers are that the sense making widens the understanding of the team that implements the project. As suggested by the management team, it gives the project leadership the ability to have a broader understanding of the delivery team, but at the same time, this broad understanding of the implementing or delivery team would yield an effective communication approach through which the deliverables of the project can be pursued and achieved.

5 Discussion

As established in this study, the precinct of stakeholder management theory outcome of any project is founded on the model that the project has developed in terms of planning, an engagement model with the various stakeholders in the project. The sense making theory stems from the fact that stakeholders have a fundamental role in the advancement of the project deliverables by engaging in a process of 'structuring the unknown' and making meaningful predictions out of the past. In terms of theory, this study reinforces the findings of Aaltonen et al. (2015) to the effect that the stakeholder model developed for the delivery of ICT projects inherently enhances the ability of the project stakeholders to advance the very outcomes of the project.

By proposing a framework for managing stakeholders through the sense making approaches, it is anticipated that the benefits of the ICT projects in Kenya will be fully realised. From the deductions of Hekkala et al. (2018), stakeholder sense making approaches, within the stakeholder management theoretical rubric, means that the project is keen not only on meeting the various expectations of the stakeholders in the project, but also on balancing the ecological, social and the economic interests of the projects considering the each of the classes of the stakeholders in the project have their own interests in the project.

One emergent key finding in this study is the fact that sense making, as a tool in the delivery of projects, acts as a hinge onto which three very critical components of project delivery revolve. One is the role of communication in enhancing project outputs. It integrates various aspects of communication and develops a methodological approach through which stakeholder communication can be used to enhance delivery of the ICT projects. Secondly, it identifies risk management as a critical element in the project delivery lifecycle and outlines the modalities through which stakeholders can be used to advance the risk profiling and management in the projects. At the same time, sense-making theory is a critical component of the project networking model.

The current understanding of sense-making is limited to the development of a higher level of understanding projects through introspection Seidl and Werle (2018). This study, from a theoretical perspective, thus builds a broader understanding of the sense-making approach by evaluating the implications of the retrospection in the delivery of projects. The study not only assigns sense-making as a retrospective activity, but also uses the introspection nature of sense-making to explore how risk, communication and collaboration can be advanced through the sense making approaches in project delivery. The sense making approaches in projects are the points of intersection between the risk management of projects, communication and collaboration in project delivery (Cicmil and Gaggiotti, 2018).

As highlighted in this study, sense making can take many dimensions and this is dependent on many factors (Hekkala et al., 2018). This study integrated three variables: communication, relationship management and risk as three very essential aspects of project management that can positively impact project direction if structured well. As shown in Figure 4, the stakeholder sense making approach, undertaken within the confines of collaboration, communication and risk management, would obviously lead to increased project outcomes in many ways.

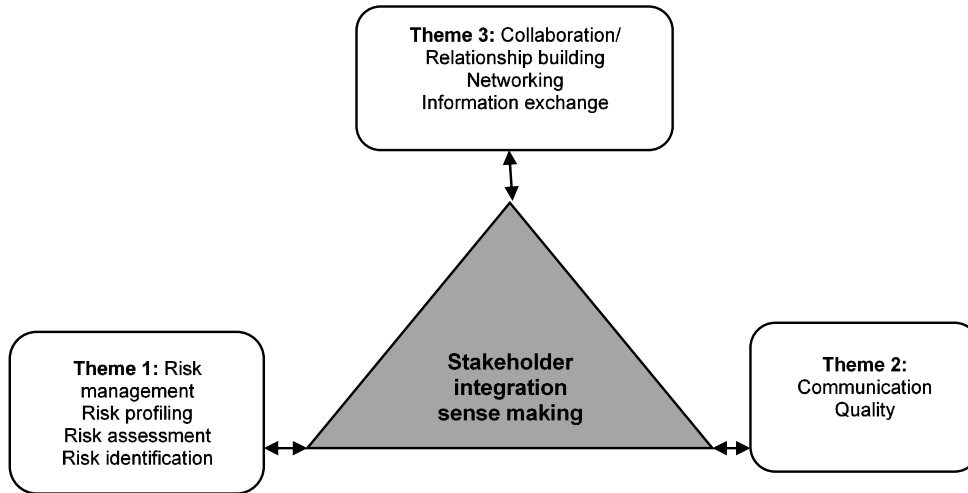**Figure 4**   Sense making approaches integrating communication, collaboration and risk management

Table 6   Illustrative data extracts (direct and percentage themes coded)

Sub-theme	Code	Code	Code
Frequency 14.35%	*Improving networking*	*Enhancing consultation*	*Sharing experiences*
Collaboration and relationship building	Provision of a forum where the various classes of stakeholders are consistently engaged in reflecting on the project progress	Improvement of the chain of communication between the various clusters of project stakeholders enhances the consultative model of the project	Experiences shared motive project delivery team

Collaboration and relationship building entails the deliberate efforts to harness the synergy of all the team members within a project and develop good work relations in the interest of advancing the project. As illustrated in Table 6, collaboration and relationship building aids in the improvement of the networks of the project executors, an activity that eventually enhances the ability of the implementing team to reflect on the details of the project. At the same time, this relationship building and collaboration is critical in improving the level of consultation in projects. The sense-making activity also opens avenues for project teams to share experiences during delivery and this opens up avenues for improving the project delivery model that is currently being implemented in a project.

5.1   Proposed stakeholder sense making model

These results, evidently, appear to be establishing the theory of sense making as an important component of project delivery. By investigating the aspects of stakeholder sense making that are relevant in the enhancement of the delivery of ICT projects in Kenya, there is a sense in which the current application of sense making in project management can be restructured in a way that integrates various elements of communication, risk analysis and project networking to come up with a stakeholder sense making model that is relevant in the delivery of major ICT projects (Marinho et al., 2018). From a theoretical perspective, it is imperative that a stakeholder sense making model must weave together various communication strategies amongst the stakeholders, risk management and collaboration or relationship building modalities amongst the various classes of stakeholders in the project.

Sense making, within the confines of communication, risk management and collaboration, can be undertaken at the project initiation phase, planning, execution and closure. Within each stage of the project management and execution lifecycle, the sense making model still plays an integral role. Moreover, the studies of Pirozzi (2018) suggests that at each project lifecycle, there is need to develop a more befitting sense making strategy that resonates with the project outcomes at each of these levels of project execution. In adopting a sense making model for improving ICT projects, this study thus proposes that an integration of major variables that are considered to be critical in project continuation is crucial. As earlier intimated, sense making is retrospective and this means that the project team has to create time to "look back

(Gioia and Chittipeddi, 2011)" or 'review (Maitlis, 2005)' the milestones of the project and through the cues developed, be able to propose a number of project enhancement strategies based on the cues that have been developed during the implementation phase. In this regard, this study suggests that sense making has to be intertwined with the project variables that are considered to be very critical in the advancement of the project. The project management team will be likely to benefit more if the executing team reflects on project variables that directly contribute to the progression of the project.

This study thus proposes that in ICT projects, sense making ought to integrate the following variables – communication, collaboration and risk management. In developing a working matrix that combines these three variables, it is important to emphasise that sense-making in projects that weaves all of these three facets of project management and sustainability together, establishes the project advancement on a very strong pedestal of improved outcomes. As earlier mentioned, ICT project teams have the onus of weaving together these three aspects of project delivery and come up with a robust matrix of operations.

What Figure 5 offers to achieve is that within the precincts of sense making theory, it is evident that the three variables work well together. In essence, this means that within the context of ICT project delivery, sense making needs to be viewed from the perspective of risk management, collaborations and relationship building and communication for better project delivery.

Figure 5 Integrating collaboration, communication and risk management within the sense making model to enhance outcome
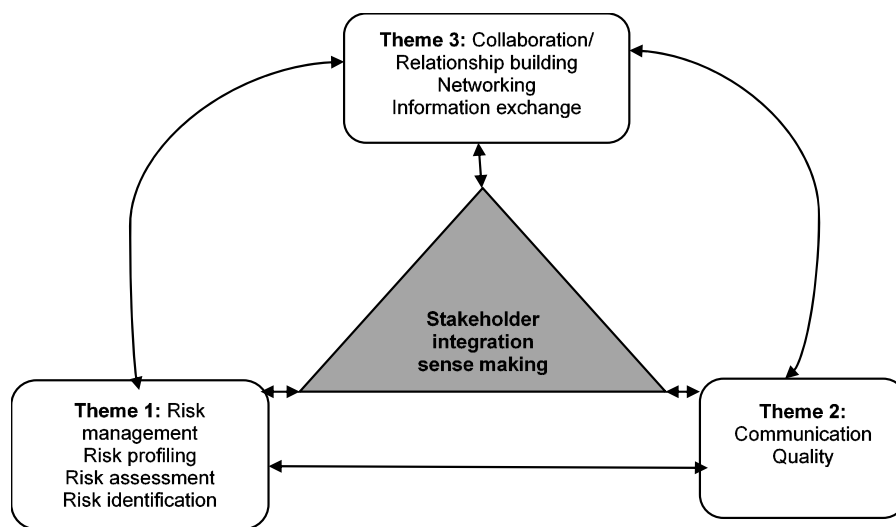
6 Conclusion

A number of key findings have emerged from this study. One notable fact is that sense making theory, as an emergent principle in ICT project delivery, has to be riveted onto specific project variables. If sense making offers the project team a moment to reflect and form cues, then it is imperative that specific variables are considered if the sense making theory is to be effectively used in enhancing the delivery of project outcomes. As established in this study, this has been clearly underscored to the effect that sense making ought to be interwoven with the three key aspects of project progress such as communication amongst the stakeholders in the project, the collaborations amongst the project executioners and the need to manage risks effectively. In proposing a framework of sense making in ICT project delivery, the study counsels that the implementing team has to be specific regarding the project variables that would greatly contribute to the project progress when sense making is operationalised. The outcomes of the study emphasise the need of developing a comprehensive stakeholder management model which weaves together communication, risk management and collaboration as key components of the sense making

template adopted. In consideration of the views of the senior project management team that formed part of the primary respondents in the study, there is obviously an urgent need to model stakeholder sense making alongside these three very key aspects of project delivery. For project delivery in the ICT Kenyan sector, there is need for the management team to have a relook at the current model of stakeholder management and adopt a sense making framework that really integrates risk management, communication and collaboration.

The outcome of the study proposes that in the context of Kenya, developing a stakeholder sense making to enhance ICT project delivery ought to focus on three critical determinants of ICT project delivery: communication, collaboration and risk management. Developing a sense making matrix in ICT project delivery ought to integrate all these three components if the project outcomes are to be improved. In theory, the practice of ICT project delivery in Kenya ought to have a relook into the communication models that are currently being applied in project delivery and incorporate sense making approaches within the communication framework currently being applied. At the same time, developing a project collaboration rubric in ICT

project delivery ought to incorporate sense making approaches as well. This is based on the outcome of this study to the effect that weaving sense making into the project risk management template would help the project managers profile the project in terms of the risks involved and eliminate project ambiguity. Moreover, developing a project collaboration strategy on ICT projects should equally incorporate sense making as a central component of managing project management and collaboration in Kenya. In practice, the results of this research study suggest that sense making is a central component of project delivery in Kenya, but its relevance is evident when it is integrated into the three aspects of project delivery – communication, collaboration and risk management. The findings of this study have a number of important implications for future practice:

- Weick's dispositions on sensemaking that it entails turning known concepts into a 'representation' ought to be handled especially in ambiguous situations, which means that project management team in the ICT sector in Kenya ought to be fully concerned about the modalities through which it can integrate various aspects of sensemaking and streamline them into the various project deliverables. In the Kenyan context, it means that the project implementing team should establish a framework through which all the deliverables in the project, in one way or the other, are integrated into the sensemaking activity. In this sense, this study recommends that the project management team develops a scaffold onto which the implementing stakeholders are offered a chance to effectively reflect on the project progress (within the sensemaking framework) at intermediate project phases as this aids in the formation of cues for the next project phase.

- Sensemaking leverages on the input of various stakeholders in the project in the formation of the project cues. What this means is that for the sensemaking model to be effective, then it is imperative that the project implementing teams, or the stakeholders, are closely integrated into the project implementation process. This study evidently lays a lot of emphasis on stakeholder integration as a principle behind effective stakeholder sensemaking approach. It is thus recommended that Kenya adopts a very practical and relevant stakeholder integration model in the ICT infrastructures to enable the stakeholders be productive in their sensemaking approaches as a way of enhancing project delivery.

- As a management principle, there is need for the Kenyan ICT sector, while trying to integrate sensemaking as an integral component in project delivery, to come up with a modest training scaffold that can be used to guide the various stakeholders in the project, on the various modalities through which all the project deliverables can be founded within an effective sensemaking model for the stakeholders.

Proposing a template for the enhancement of project delivery requires that the various variables or factors involved in project delivery are looked at in totality. This stems from the discussions of Hosman et al. (2008) that suggested that the development of a project improvement plan ought to have a broader project delivery facet so that the project implementing team can effectively propose improvements necessary for the project delivery. In this regard, this work falls short of the discourse by Bygstad and Lanestedt (2009) by focusing on just four aspects of project delivery. For further research, there is need to broaden the modalities through which stakeholder sensemaking can be applied to other variables of project delivery. This can be adequately addressed by including more project delivery variables within the study and assessing their overall contribution to the general project delivery outcomes.

In consideration to the studies of Dekkers and Forselius (2007) a quantitative approach would be critical in developing a framework for enhancing project delivery in ICT projects. In essence, an empirical study would be essential in the evaluation of the extent to which project variables really influence the outcome and the delivery of specific projects. This research falls short of evaluating the extent to which the identified project variables are key to the delivery of ICT infrastructure projects in Kenya. Future studies could focus on developing a more quantitative approach in assessing the manner in which stakeholder sensemaking various aspects of projects, a more of a quantitative approach would be more preferable. This research proposes that an empirical study design would help offer a crisper picture of the extent to which stakeholder sensemaking influences the enhancement of project ICT infrastructure project outcomes.

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