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EXPLORING THE ROLE OF STAKEHOLDER MANAGEMENT IN THE SUCCESSFUL IMPLEMENTATION OF FULL TURNKEY IPTV PROJECT: THE CASE OF ETHIOPIAN AIRLINES

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ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF PROJECT MANAGEMENT

EXPLORING THE ROLE OF STAKEHOLDER MANAGEMENT IN THE SUCESSFUL IMPLEMENTATION OF FULL TURNKEY IPTV PROJECT AT THE CASE OF ETHIOPIAN AIRLINES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF ARTS DEGREE IN PROJECT MANAGEMENT

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Declaration

I Tirsit Shitu, hereby declare that the thesis on the topic entitled "Exploring the Role of Stakeholder Management in the Successful Implementation of Full Turnkey IPTV Project at The Case of Ethiopian Airlines" is submitted by me for the award of master of Art Degree in Project Management from Addis Ababa University School of Commerce. It is my original work and all sources and materials used for this thesis have been appropriately acknowledged.

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Statement of certification

This is to certify that Tirsit Shitu has carried out this MA thesis on the topic entitled" EXPLORING THE ROLE OF STAKEHOLDER MANAGEMENT IN THE SUCCESSFUL IMPLEMENTATION OF FULL TURNKEY IPTV PROJECT: THE CASE OF ETHIOPIAN AIRLINES" under my supervision. This work is original in nature and it is sufficient for submission as the partial fulfillment for the award Degree of Masters of Art in Project Management

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Abstract

Why Stakeholder Management is needed in Turnkey IPTV implementation? The implementation of complex digital infrastructure, such as Internet Protocol Television (IPTV) systems, within the aviation sector involves significant technical interdependence and governance challenges. This study investigates stakeholder management as a primary mechanism for the successful delivery of a full turnkey IPTV project at Ethiopian Airlines, specifically focusing on the deployment across terminal facilities at Addis Ababa Bole International Airport. Employing a qualitative case study design, the research utilized semi-structured interviews with 12 key participants, including both the airline and contractor stakeholders. Data were analyzed using reflexive thematic analysis, guided by integrating Stakeholder Theory, Agency Theory, and Transaction Cost Economics. The findings reveal that successful implementation relied on five critical pillars. First, the systematic identification of stakeholders through Showstopper salience moved beyond static organizational charts to recognize operational authority. Second, the deployment of Internal Expert Shields allowed the airline to counter information asymmetry. Third, the study identifies a Turnkey Paradox, where the client utilized the interpretive flexibility of a finished solution to expand project scope within a fixed-price model. Fourth, the emergence of a Relational Architecture a hybrid communication network blending formal audit trails with high-velocity informal digital platforms provided the agility necessary to resolve technical hold-up problems. Finally, in high-stakes aviation environments, success is redefined through Perceived Value and user satisfaction, which effectively overrode traditional Iron Triangle constraints of schedule and cost. The study concludes that successful turnkey implementations require the client organization to transition from a passive technical recipient to an active governance monitor. The research highlights that stakeholder satisfaction serves as a more comprehensive metric for value realization than perfect schedule adherence.

Keywords: Stakeholder Management, Turnkey Project Delivery, IPTV Implementation, Relational Architecture, Information Asymmetry, Showstopper Salience, Turnkey Paradox.

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Acronyms

AOCC - Airport Operations Control Center

CDN - Content Delivery Network

DRM - Digital Rights Management

ET - Ethiopian Airlines

IP - Internet Protocol

IPTV - Internet Protocol Television

IT - Information Technology

PMBOK - Project Management Body of Knowledge

PMI - Project Management Institute

PMO - Project Management Office

POE - Power over Ethernet

QoS - Quality of Service

RFP - Request for Proposal

TCE - Transaction Cost Economics

USB - Universal Serial Bus

VIP - Very Important Person

VS – Versus

PMS – Property Management System

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Stakeholder management is not negotiable in the success of complex technology projects, involving the systematic identification, analysis, planning, and management of interactions with diverse stakeholders throughout the project lifecycle (PMBOK guide, 2021). Effective stakeholder management is about finding a balance between all the competing interests, needs and levels of influence everyone involved, whether they're management, technical teams, regulatory bodies, suppliers, contractors, or the end users themselves (Freeman, 2010).

Traditional project management concentrate on iron triangle constraints. But contemporary theory recommends that the relational architecture of a project and alignment of stakeholder engagement for resilience and value realization (Cingöz & Durmaz, 2024).

Execution of IPTV system in airports symbolizes a technologically advanced and multifaceted project. It that depends on strong stakeholder engagement (Barry et.al 2018). The complicatedness of IPTV projects emerges from technical interdependence and content governance. Technically, IPTV requires the smooth integration of servers, gateways, encoders, media players and Content Delivery Networks (CDNs) under strict Quality of Service (QoS). A failure in one integration affects the entire stakeholder network (Giannakopoulos et al., 2025). Also, content governance including Digital Rights Management (DRM) and moderation complicates the implementation by including policy execution directly into the engineering division. This requires strong collaboration between content providers and system integrators (Koppolu, 2025).

Organizations utilize the turnkey delivery model to resolve the above complexities. But the turnkey model differentiates itself from non turnkey IT projects by introducing separate behavioral and governance outcomes. In a turnkey delivery type, project design, installation, testing and commissioning, and delivering a complete operation solution is a responsibility of single contactor (Osemeike, 2024). The centralization of accountability in a single contractor always squeezes the client's internal stakeholder interactions, shifting the role of network

administrators and operations teams from technical integrators to governance monitors (Cingöz & Durmaz, 2024). This can create information asymmetries and change stiffness. The turnkey contract structure limits iterative development and makes proactive stakeholders' engagement rather than managing contracts for emerging misalignments (Subburayan et al., 2024). On the contrary non turnkey IT projects permit for more flexibility and smaller, iterative updates throughout the project lifecycle (Ngah, 2025; Plugge, 2024). As a result, the role of the client's IT team will be following up the job completion by the contractor rather than being involved in integrations in the project and management of interactions. (Zangana et al., 2024; Adama et al., 2024).

Stakeholder management is essential in turnkey IPTV projects. Because these projects require needs alignment of different stakeholders such as contractor, technology vendor, content provider, marketing teams, network administrators and end-users. These stakeholders need always conflict with the rigidity of turnkey contract. In contrast to IT projects that concentrates on the technical stability of a system, the turnkey IPTV model includes continuous negotiation, joint sensemaking, and collaborative problem-solving. This occurs particularly when technical uncertainties and conflicting requirements emerge during implementation (Trigo & Varajão, 2020; Brunet et al., 2023). This model requires continuous management of tensions between the contractor's scope and newly emerging demands of different departments of client organization. (Zangana et al., 2024; Ngah, 2025). Since IPTV is content dependent and visible system, detecting operational misalignments that contract management may overlook be done through proactive stakeholder engagement for successful delivery. (Hossain et al., 2024; Adama et al., 2024).

Always, contract management or risk management are presented as explanatory lenses. But stakeholder management is theoretically advance for analyzing turnkey IPTV implementation. Contract management concentrates on legal compliance. This always fails to achieve the dynamic real time collaboration required in complex technical systems. Because formal clauses cannot answer each operational contingency (Giannakopoulos et al., 2025). In the same manner, risk management tries to see challenges as probabilistic situations to be entered. Whereas stakeholder management addresses relational interdependence and information flows that causes those risks to manifest (Cingöz & Durmaz, 2024).

Stakeholder interdependence related to safety, operational continuity and passenger experience is increased in aviation context. Especially Ethiopian Airlines present a theoretically challenging environment for this study. In airline operations, safety criticality is more important. Any digital infrastructure change including IPTV must be evaluated through maintenance and regulatory stakeholders. Because system failures may have severe reputational and regulatory consequences (Yohanes & Sudiro, 2024).Also Addis Ababa Bole International Airport requires a high quality operational continuity 24/7. This implies that technical implementation have to be synchronized across different stakeholders to avoid cascading delays (H. Feng et.al, 2025).

Finally, Ethiopian Airlines pursues its "Vision 2035" digital transformation. It’s the link between terminal entertainment and passenger experience metrics. This creates a high stake environment where, IT, commercial and catering teams must remain perfectly aligned (Moghadasnian, 2024; Ethiopian Airlines, 2024).

This study investigates how stakeholder management functions as the major method for successful implementation of a full turnkey IPTV system at Bole Airport.

1.2 Statement of the Problem

Turnkey delivery models are becoming common in complex technology projects. But there are conceptual limitations on current stakeholder management structures while applied in turnkey model. The major theoretical problem appears in the misalignment between conventional stakeholder management model assumption and actual requirement of turnkey IPTV project in aviation.

As Freeman (2010) and Winch (2023) notes, existing stakeholder management model assumes comparatively different contractual limitations and different organizational responsibilities. In this model the primary coordinating authority is the project manager or client organization with direct control over project stakeholders. But in turnkey contracts delivery accountability is centralized with the contractor. While client airline, aviation securities, content providers and end users are responsible for regulatory authority, operational responsibility and strategic decision making. This creates what Winch (2023) terms governance challenges across the commercial interface. A zone where traditional client led project management or supplier led contract execution don’t adequately addresses the relational coordination, joint sense making, and

collaborative decision making. This are required to control technical issues and conflicting needs. In existing models there is a theoretical limitation on how stakeholder roles, authority boundaries and communication protocols negotiated. But operational accountability and delivery responsibility are structurally separated.

In conventional frameworks, assumes the divers group of stakeholders as manageable by stakeholder mapping matrices (PMI, 2021). However, stakeholder diversity and conflicting goals are the primary movers of project complexity and governance friction as per the empirical research on large IT projects (Eftekhari et al., 2022). In turnkey IPTV projects, this diversity is increased by the merging of multiple stakeholder logics. Contractors priority is achieving delivery milestones and contractual alignment. Airlines ensure operational stability and passenger experience. Regulators enforce security and safety standards. Content providers control commercial rights and service level agreements. And technical vendors focus on equipment performance and system integration.

The collective group of diverse stakeholders operates under various success metrics. This are risk tolerance and decision-making timelines. Where simple influence matrices are unable to reconcile and endure goal divergence. The researcher found that there is a lack of empirical evidence on literatures. Whether the conflicting stakeholder logics are reconciled or not in turnkey aviation IPTV projects. Plus as Azzahra (2023) noted that formal communication plans and stakeholder mapping techniques showed to enhance alignment in complex IT implementations. But concerning their operationalization in turnkey contexts remain underspecified where authority and accountability are distributed.

The practical effects of these theoretical gaps are significant. Lack of strong stakeholder management in turnkey technology projects resulted in cost overruns, schedule delays, scope creep and insufficient technical solutions. These factors influence the high failure rates presented in complex IT deployments (Standish Group, 2020; Eftekhari et al., 2022).

Case studies of healthcare turnkey infrastructure installations manifested that insufficient communication channels, confusing milestone ownership and collaboration failure between stakeholders are recurring causes of project delays (Gowda et al., 2022), and suggesting similar challenges may arise in aviation IPTV contexts. Poor stakeholder management for Ethiopian Airlines Bole Airport IPTV system implementation may result in financial loss for both client

and contractor. Also Operational inefficiency influencing passenger experience and regulatory misalignment. But there is a limitation of literatures on which stakeholder management practice influence these outcomes in turnkey aviation IPTV context.

Therefore, this study will investigate stakeholder management practice in Ethiopian Airlines turnkey IPTV project implementation and will contribute to fill the conceptual and empirical gaps.

1.3 Objectives

1.3.1 General Research Objective

The general objective of the study is to investigate the role of stakeholder management in the successful implementation of IPTV system in Ethiopian Airlines under turnkey contract.

1.3.2 Specific Research Objectives

1. To examine the processes of stakeholder identification and prioritization (salience) and how they address information asymmetry between the turnkey contractor and Ethiopian Airlines.
2. To evaluate the effectiveness of stakeholder engagement strategies in navigating contractual rigidity and the "hold-up" problems inherent in the turnkey delivery model.
3. To investigate the effectiveness of stakeholder management strategies in rigid contracts and hold up problems in turnkey model.
4. To examine the methods used to reconcile the goal divergence and conflicting stakeholder logics between contractor and Ethiopian Airlines

1.4 Research Questions

RQ1: How does the systematic identification and prioritization of stakeholders (based on power, legitimacy, and urgency) help Ethiopian Airlines reduce technical information asymmetry when dealing with a single-point-accountability turnkey contractor?

RQ2: In what ways do formal and informal engagement strategies allow project managers to maintain relational architecture and flexibility, given the rigid, fixed-price nature of a turnkey IPTV contract?

RQ3: In what ways do formal and informal engagement strategies allow project managers to maintain relational architecture and flexibility, given the rigid, fixed-price nature of a turnkey IPTV contract?

RQ4: How are the conflicting logics of diverse stakeholders reconciled during the implementation phase of the IPTV project?

1.5 Scope of the study

This research investigates how managing stakeholders contributes to the effective execution of comprehensive turnkey Internet Protocol Television (IPTV) projects, using Ethiopian Airlines as a case study. The study delves into the processes of identifying, categorizing, and engaging stakeholders, as well as the communication strategies employed, and evaluates their combined effect on project success. Success is assessed in terms of time, cost, quality, scope, and stakeholder satisfaction. The study encompasses both internal stakeholders (IT project management teams, Network Administrator teams, and Advertisement teams) and external stakeholders (turnkey contractor subcontractors, technology vendors and satellite channel provider) involved during project implementation period.

1.6 Limitation of the study

This research is constrained by its focus on a single case study, specifically examining Ethiopian Airlines at Addis Ababa Bole Airport, which includes its international, domestic, and VIP terminals. It does not include regional Airports. In addition the study does not evaluate the technical and engineering specifications of the IPTV system.

1.7 Organization of the study

This study is organized into five chapters, beginning with the introduction of the research problem, objectives, and questions in Chapter One. Chapter Two reviews the theoretical and empirical literature to establish a conceptual framework, while Chapter Three details the qualitative case study methodology, including purposive sampling and thematic analysis. Chapter four provide the data analysis and discussion. Finally, Chapter five presents conclusion and recommendation.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 Theoretical Foundations of Stakeholder Management in Project Success

Stakeholder theory (Freeman, 2010) is the main focus of this study. In order to examine how stakeholder management affects project implementation success in turnkey IPTV projects. Still stakeholder theory offers limited knowledge of situations where these relationships lead to quantifiable results. Consequently, this research combines stakeholder theory with resource dependence theory and agency theory to develop a more comprehensive causal framework.

2.1.1.1 Informal Mechanisms Connecting Stakeholder Management to Project Success

There are three main theoretical mechanisms to explain the role of stakeholder management practices on project implementation success. According to Joos et al. (2020), stakeholder salience and influence allocation determine whose interests influence project decisions and resource allocations by identifying and ranking stakeholders according to their authority, legitimacy, and urgency. When important stakeholders are identified and their needs are included in project planning and improving delivery performance, there will be less conflict and project scope will match stakeholder expectation (Rabechini et al., 2022).

And stakeholders control critical resources including funding, technical expertise, regulatory approvals and organizational support that enable project execution (Cichosz et al., 2020). As per Pfeffer and Salancik (1978) resource dependency theory, projects are successful when they use strategic responses and relationship building to manage their reliance on outside resource providers. In turnkey IPTV contexts, this means engaging airline management, IT departments, Marketing, regulatory bodies, and technology vendors to access their distinct resources.

Furthermore, conflict mitigation through participation (Joos et al., 2020) argues that inclusive stakeholder engagement converts potential opposition into cooperation by providing voice and addressing concerns proactively, thereby protecting project timelines and budgets from stakeholder-driven disruptions. This is useful method in airline sectors which requires coordination of many departments on the new technology system.

2.1.1.2 Factors That Increase or Decrease the Role Of Stakeholder Management

According to theoretical and empirical data, the impacts of stakeholder management are conditional rather than universal. The advantages of stakeholder management are minimized by project complexity. Increased complexity increases coordination cost and reduces the useful impact of external stakeholder engagement (Ma et al. (2022). Complex turnkey IPTV implementations involve hardware, software, content management, and network infrastructure. So stakeholder inputs become harder to integrate coherently. This weakens the stakeholder success relationship.

On the contrary, governance support methods increase stakeholder management effectiveness. The presence of Project Management Office (PMO) strengthens the relationship between stakeholder management practice and on time, on budget delivery (Rabechini et al. 2022). Because PMOs provide institutionalized structures for stakeholder communication, decision making protocols, and conflict resolution procedures. These translate stakeholder inputs into actionable project adjustments.

2.1.2 Theoretical Anchoring of Turnkey Project Delivery Models

Distinct governance and stakeholder dynamics are created in turnkey project model. Because design, procurement, construction, commissioning, and handover are the responsibilities of a single contractor. This study relies on agency theory (Eisenhardt,1989) and transaction cost economics (Williamson,1985) to explain why turnkey models moderate stakeholder success relationships.

2.1.2.1 Agency Theory and Principal-Agent Dynamics

As Eisenhardt (1989) shows agency theory addresses the main issue of aligning interests between the client and turnkey contractor when information asymmetry and goal divergence emerges. In Ethiopian Airlines turnkey IPTV projects, the contractor was given full authority to design and implement the full system. These results in agency problems that affect stakeholder management.

The turnkey contractor possesses advanced technical knowledge of the IPTV system design, integration and implementation. This will lead to information asymmetry. And this information

allows hiding problems during execution, understating difficulties and exaggerating capabilities. As a result it will be difficult for the airline to monitor performance effectively (Ahola, 2023).

Conflicting goals happen as the contractor goal is to increase profit by reducing costs and quick delivery while airline goal is to increase system quality and long term operational reliability. Because of these goal divergence, a situation known as moral hazard may occur (Ahola, 2023). That is contractors compromising on scope or quality to increase their profit.

Turnkey contracts transfer significant risk to the contactor. Taking the risks will result in tensions. Because the contractor may respond by developing excessive contingencies into pricing or by resisting scope changes that benefit stakeholders but reduce contractor profit.

Effective stakeholder management in turnkey projects as per agency theory suggestion requires formal controlling methods and incentive based structures. These are site inspection, milestone review, technical audits, performance based payments, penalty clauses and warranty provisions. These helps to minimize information asymmetry and goal divergence (Ahola, 2023).

2.1.2.2 Transaction Cost Economics and Governance Choices

Transaction cost is the cost of searching, contracting, monitoring and enforcement agreements. By applying the above definition, transaction cost economics explains why organization choose turnkey model (William, 1985). Because turnkey contracts reduce transaction costs and simplify the responsibility of interface management and coordination by merging several contracts into single agreement (Ahola, 2023).

But turnkey model may also result in hold up problems. After the airline gives the contract to turnkey contractor, switching cost become high due to technical incompatibilities. This creates opportunity for contractors post contractual negotiating power (Williamson, 1985). To prevent such opportunistic behavior by maintaining clear requirements and documenting stakeholder needs comprehensively upfront, effective stakeholder management is essential.

2.2 Empirical Literature Review

2.2.1 Stakeholder Management Practices in IT and Technology Projects

Empirical research on stakeholder management practice in IT and technology projects provides mixed evidence about effectiveness. The significant contextual and methodological variations hinder the generalizability to turnkey IPTV deployment in African aviation context.

Rabechini et.al (2022) in a participant of 216 project managers in Peru discovered that stakeholder management increased the probability of finishing projects on schedule and under budget. Also projects with formal PMO structures had greater impact on stakeholder management than projects without PMO. But this study was limited to Peru and didn't see quality or stakeholder satisfaction out comes.

In the same manner, in the study of 365 Chinese constructions project professionals Wu et al. (2023) discovered strong direct connections between stakeholder participation and sustainable success.

Cichosz et al. (2020) performed different case studies on 9 international logistic service providers. These service providers were undergoing digital transformation. The case studies discovered that successful transformation depended on leadership vision, organizational culture, and resource capabilities with stakeholder management support but not critical role. Main hindrances include network complexity and lack of resource. The study concluded that, stakeholder management is not sufficient to close basic competence gap in resource constrained environment.

On several studies stakeholder management showed limited or no significant effect. Stakeholder management resolves negative impacts on qualitative performance but had no significant effect on quantitative performance (Nguyen et.al, 2020). As per McLeod et al. (2021), factors affected success ratings were stakeholder role, Organization level and temporal distance from project completion. This creates a concern regarding the success criteria that should be given priority.

These empirical studies show methodological limitations. Since most quantitative studies are focused on one country and organization specific, its transferability to African aviation context is limited. Because the regulatory environments, organizational cultures, and resource constraints differ significantly (Alemu & Tadesse, 2024). Studies define success differently, suggesting that

stakeholder management impacts may be result specific than universally positive. Evidence about moderators is mixed. Moderator influences are context dependent and require careful specification. Few studies examine IT or telecommunications turnkey deployments. This is essential because aviation technology projects face unique regulatory requirements, operational constraints, and stakeholder complexity that may affect stakeholder dynamics.

2.2.2 IPTV and Aviation Technology Implementation

A major empirical gap exists specifically regarding IPTV implementation projects. The literature search showed that there are no studies that examine IPTV implementation in airlines. This limitation is creates a crucial gap that this study attempts to fill.

Although there is less any IPTV-specific data, relevant research on aircraft connectivity and digital transformation is available. Shah (2025) examined the technical challenges of integrating data link and 5G connectivity into legacy general aviation aircraft, finding that legacy avionics systems have constrained processing capacity and non-networked architectures that restrict integration options for IP-based services, and that regulatory certification requirements add complexity and timeline to connectivity implementations.

Giles et al. (2020) analyzed the transition from closed aviation communications networks to IP-based aviation internet infrastructure, emphasizing that successful transitions require coordinated stakeholder planning involving industry, regulators, and service providers; technical standardization and compatibility validation; and explicit risk mitigation strategies. Cheung et al. (2023) discussed digital transformation in aviation, highlighting that successful adoption requires organizational readiness, stakeholder buy-in, and data-sharing governance mechanisms reinforcing that technology implementation success depends on organizational and stakeholder factors beyond technical capabilities.

The absence of IPTV-specific empirical research means this study addresses a clear empirical gap by providing documented case analysis of full turnkey IPTV implementation in Ethiopian Airlines which represents an interesting empirical case because it is Africa's largest and most successful airline, with strong management, regional leadership, and ongoing modernization efforts (Wembe, 2021).

2.3 Synthesis and Research Gaps

2.3.1 Established Knowledge

Integrating theoretical and empirical literature reveals established knowledge. Stakeholder management influences project outcomes through stakeholder salience and influence allocation, resource access and capability enhancement, and conflict mitigation through participation (Joos et al., 2020; Rabechini et al., 2022; Cichosz et al., 2020). Stakeholder management impacts are variable rather than universal. It depends on resource availability, project complexity, governance support structures and organizational capabilities (Ma et al., 2022; Rabechini et al., 2022; Cichosz et al., 2020). Stakeholder management show up more success at impacting perceptual and relational results than objective based delivery requirements (Nguyen & Mohamed, 2020; McLeod et al., 2021). Turnkey delivery models create unique governance challenge. It is as a result of contractual rigidity, goal divergence and knowledge asymmetry (Ahola, 2023; Friedlander et al., 2024).

2.3.2 Critical Research Gaps This Study Addresses

I. The empirical gap on limitation of finding existing research on IPTV implementation in aviation context.
II. The empirical gap on how turnkey delivery model affects stakeholder management practices and project outcomes in aviation technology projects.
III. The methodological gap on qualitative case analysis because most existing stakeholder research uses quantitative methods.
IV. The theoretical gap on moderating mechanism of turnkey delivery model on how it moderate stakeholder success relationships.

This study aims to address these gaps with qualitative case study of Ethiopian Airlines turnkey IPTV implementation through theoretical knowledge of stakeholder management in complex technology projects and practical understanding about managing turnkey delivery models in African aviation context.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design and Approach

This study employs a qualitative case study design. Since stakeholder management is impacted by social meanings and informal practices that are not captured by numerical data, a qualitative approach is preferable to quantitative or mixed methods. Quantitative methods measure what happened while qualitative methods explain how and why the issues happened (Watkins & Denney, 2023).

Success depends on shared buy in and mutual value creation in complex IT projects like Ethiopian Airlines IPTV implementation. According to Zhai et al., (2025) exact project results can be accurately predicted by how stakeholders see participation and communication pattern. Where standard surveys mostly overlook dynamics like trust, power struggles, and convert negotiations. These are captured by qualitative methods (Salehi, 2024).

The researcher acknowledges that perception-based data may be subjective and subject to memory errors. In order to manage this, data triangulation, audit trial, peer debriefing, cross referencing interview responses with project documentation is used to ensure a balanced and credible interpretation (Stampfl et al., 2023).

3.2 Target Population

The study target group included key individuals involved in the IPTV project implementation. This includes IT project managers, network administrators, advertisement team, end users, project director and technical staffs representing both the client and contractor who were actively involved in the implementation phase.

3.3 Sampling Method

The study utilizes purposive sampling in which researchers pick only individuals who believe that they are qualified to participate in the researcher project. So, participants are chosen based on their knowledge and capacity to offer in depth perspectives on the project rather than being chosen at random (Ebekozien & Aigbavboa, 2023).

Participants were selected based on their direct role for a project work package, decision authority to approve changes or manage resources and active participation during implementation.

The sampling method keeps balance by interviewing both client and contractor sides. The study controls stakeholder dominance to avoid finds biased towards client's perspective. But the study reflects the friction and cooperation between both sides (Salehi, 2024).

3.4 Sample Size and Saturation

The aim of qualitative research is thematic information redundancy or saturation. This is the point at which no new information or themes are emerging from the new interviews. Ebekozien and Aigbavboa (2023) confirm that for focused studies with expert participants, a sample size of 12 to 15 is enough to reach saturation. So information redundancy was closely monitored to make sure that the validity and reliability of the study outcomes. This study involved 12 participants until data saturation was achieved.

3.5 Data Collection Instruments

The primary source of data was gathered using semi structured interviews in addition to observations and documents. This method helps participants to express their views, experiences and perceptions in a flexible and focused manner (Bell et al., 2022; Oliveira et al., 2023). The semi structure interview guide is composed of open-ended questions to draw out participants experiences and perspectives on stakeholder management in the successful implementation of IPTV project in Ethiopian Airlines.

3.5.1 Pilot Test

Pilot test was performed with two participants before starting the major interviews. This helps to find and fix any confusing questions and add better follow up question

3.6 Data Collection Procedure

The major data collection method for the study involves semi structured interviews followed by audio recordings and review of organizational documents. The interview was carried out as per the detailed semi structure interview guide (See Appendix). This established a step-by-step

process including the question sequence and standardized procedure for audio recording and verbatim transcription. (Bell et al., 2022).

3.7 Method of Data Analysis

The main method underpinning qualitative analysis that many researchers follow is the thematic analysis technique (Braun et al, 2023: Braun and Clarke, 2021a, 2021b; Shortland and Perkins, 2022; Watkins et.al., 2022). This technique provides a step-by-step process that allows large amount of data to be filtered and grouped in to identifiable themes. The researcher used this method for the data analysis. The six phase of analysis followed are detailed in the below table.

Steps	Definition
Data familiarization	The first phase and reading of the participants response
Coding	Labeling data segments
Initial theme generation	Synergies identified and initial theme generation
Reviewing and developing themes	Further review of the initial themes to identify cluster and patterns of shared meaning
Refining themes	Interrogate themes from step four, produce network diagram and identify final themes for discussion
Reporting	Linking the findings to the research objectives

Table 1 Phase of thematic analysis (Braun et al, 2023)

3.8 Validity

Data was collected from the reliable sources who have involved in the IPTV project implementation. After the transcription of interviews, the researcher shoed back to the participants to make sure everything was correct. Also triangulation was used to compare interview data with project documents and peer debriefing to check for potential bias.

3.9 Reliability

The researched tried to design the instruments using reliable sources such as published books, articles, and previous research in the field. And received feedback from the research advisor on the interview guide in order to minimize instrument errors. Plus, the researcher used the same

interview questions for all participants to stay consistent maintaining a detail record of raw data, reflexive memos and coding decisions made during data analysis. Interviews were performed in person and through phone call.

3.10 Ethical considerations

In this study a particular consideration of ethical principles that are developed by different researchers have been followed. Permission was gained from Ethiopian Airlines, Skylight hotel and ATI/Avicom to conduct the research. Participation was held voluntarily and participants were informed that the data would be kept private and used solely for educational purposes.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The aim of this chapter is to present and analyze the data collected concerning stakeholder management during implementation of the IPTV project at Ethiopian Airlines. The data analysis utilizes hybrid coding method integrating deductive and inductive codes. The analysis follows thematic approach.

4.2 Data Familiarization and Participant Profile

The data consists of 12 key participants who were actively involved in the IPTV implementation phase. These participants were selected representing both the client (Ethiopian Airlines and Skylight hotel) and the contractor ATI/Avicom.

Stakeholder Group	Roles Represented	Number of participants
Ethiopian Airlines staffs	Project Managers, Network Specialists, Support teams	6
Skylight Hotel staffs	Advertising Lead, End user, Hotel operation	3
ATI/Avicom	Project Director, Technical lead, Installation team	3

Table 2 Participant composition (Source: self)

4.3. Coding Process

4.3.1 Steps for coding

The following steps are followed for coding.

Step 1: After transcribing the 12 interview recordings, the researcher read the transcripts repeatedly and took note on frequently appearing ideas, unexpected statements and moments of strong emotions where participants reacted

Step 2: Then went through each transcript and assign descriptive codes for meaning full segments. (refer to table 3 coding examples)

Step 3: After that listed all codes then identify those appearing frequently and those which are connected to group them.

Step 4: After grouping the codes, the researcher drafted six tentative themes

Step 5: Then review and refine the themes by going back to the raw data to confirm that each theme is represented correctly.

Step 6: Finally define the final themes ensuring that each theme has five supporting quotes from different participant

4.3.2. Saturation assessment

The way how the researcher assessed saturation is by reviewing transcripts in the order they were collected. After analyzing the first five interviews, all codes had appeared. Participant 6 to 10 confirmed the existing themes. Participants 11 and 12 brought two additional supportive codes but not new one. So, data saturation was reached with 12 participants.

4.3.3 Sample Reflective Memo

The following is an example of reflective memo wrote while coding.

Reflective Memo on 25th April 2026

The researcher noticed a pattern that is surprising. after coding participant 4 (Airline network expert) and 5(Contractor technical person). Both described the multicast debate differently.

Participant 4 emphasizes fear of network disruption and the airline research to prevent problems while participant five describes the same situation as the airline internal experts preparing the necessary infrastructure in advance. This implies that both sides saw that the airlines expertise as legitimate. Neither saw it as conflict which is contrary to the literature about information asymmetry. So, I will keep the theme as verification to reflect this collaborative tone rather than confrontation.

After coding participant 11 (end user at the hotel) and participant 12 (support team), the researcher recognized that neither described the operational overwhelm as a barrier. This implies that operational overwhelm affected the project team more than the end users. The researcher will keep the theme as how the project team overcame these barriers to deliver user satisfaction.

4.3.4 Coding Examples

The following table presents direct quote from participant, initial code and final theme. This shows the way of analysis.

Raw Quote (Participant #)	Initial Code	Final Theme
"We identified so many critical stakeholders who have a direct say... and we also identified some stakeholders who have a wish list." (P1)	Showstopper vs. Wish-list	Theme 1: Showstopper Salience
"If they don't grant access, the work stops." (P7)	Power of access	Theme 1: Showstopper Salience
"All of them are critical. Everyone is critical according to their scope of work." (P11)	All stakeholders critical	Theme 1: Showstopper Salience
"We did a lot of research on multicast technology so that it doesn't affect the rest of the network." (P4)	Internal research to verify vendor	Theme 2: Internal Expert Verification
"Our network team challenged this, and after discussions, it was decided to continue using the multicast environment." (P7)	Challenging vendor claims	Theme 2: Internal Expert Verification
"Identifying these things through our project professionals helped us easily solve problems at an early stage." (P11)	Early expert problem solving	Theme 2: Internal Expert Verification
"The contractor added more than 20 media players... because our project is turnkey, it was not a change." (P1)	Using turnkey definition to expand scope	Theme 3: Turnkey Paradox
"Requests for changes... created cost pressures on us." (P5)	Contractor cost pressure	Theme 3: Turnkey Paradox
" There was a time when a contractor claimed certain UTP cables were outside the contract... Since the contract mandated a finished product, we handled it according to those terms. (P7)	Project scope addition	Theme 3: Turnkey Paradox
"Mostly we finalized things over the phone. That informal communication made a good contribution." (P3)	Informal communication for speed	Theme 4: Relational Architecture
"The contractor would look at the problem... then we'll investigate... some we solved ourselves, some we returned to the contractor." (P4)	Collaborative troubleshooting	Theme 4: Relational Architecture

" A robust communication framework was implemented...This ensured transparency, traceability, and alignment, forming a strong relational architecture between the airline and project stakeholders." (P10)	Robust communication	Theme 4: Relational Architecture
"Their expectation was you open a TV and get a channel... now they can do many things... it exceeded expectation." (P1)	Exceeding expectations	Theme 5: Multifaceted Success
"A centralized system means we can manage all content from a single point. It brings massive benefits." (P11)	Centralized system advantage	Theme 5: Multifaceted Success
"The current system is running almost completely smoothly, and we are managing fine." (P12)	Post-implementation satisfaction	Theme 5: Multifaceted Success

Table 3 Coding examples (Source: self)

4.3.5. Deductive and Inductive Codes

The codes are grouped in two categories after coding. These are deductive and inductive codes. Below are the final lists.

4.3.5.1 Deductive Codes (Theory-Driven)

these codes are derived from existing theories. These theories include stakeholder theory, agency theory, and transaction cost economics theory. The theories are uses as a starting point but improved and adjusted when data analysis progressed.

Deductive Code	Definition	Theoretical Source
Power	The ability of a stakeholder to stop the project or force compliance	Stakeholder Theory
Urgency	Time-critical requirements that demand immediate attention	Stakeholder Theory
Legitimacy	Perceived validity of a stakeholder's claim or expertise	Stakeholder Theory
Salience	The degree to which stakeholders are prioritized (critical vs. marginal)	Stakeholder Theory
Information Asymmetry	Knowledge gap between contractor (product knowledge) and client (infrastructure knowledge)	Agency Theory

Contractual Rigidity	Constraints imposed by fixed-price, fixed-scope turnkey contracts	Transaction Cost Economics
Goal Divergence	Conflicting objectives between principal (airline) and agent (contractor)	Agency Theory

Table 4 Deductive codes (Source: self)

These codes are used during initial coding. But as the analysis progressed, some deductive codes are merged with inductive codes. Such as, the deductive code power is merged with the inductive code show stopper since participants use showstopper naturally and repeatedly than power.

4.3.5.2 Inductive Codes (Data-Driven)

These codes are emerged from the data during careful review of each transcript.

Inductive Code	Definition	First Appearance
Showstopper	A stakeholder whose approval or access is mandatory; without them, the project stops	Participant 1
Wish-list	A stakeholder whose desires are nice-to-have but not critical for project completion	Participant 1
Physical Site Discovery	Identifying stakeholders by walking the physical site and asking "who owns this?"	Participant 1
Operational Overwhelm	Stakeholders too busy with daily airline operations to attend meetings or training	Participant 1
Relational Architecture	The mix of formal (email) and informal (WhatsApp, phone, Teams) communication that enabled agility	Participant 3
Multicast vs. Unicast Debate	The specific technical conflict where internal experts challenged the contractor's network design	Participant 4
Internal Research Before Implementation	Airline experts studying technology independently before accepting contractor claims	Participant 4
Collaborative Troubleshooting	Both sides investigating problems together rather than blaming each other	Participant 4
Turnkey Leverage	Using the turnkey contract's definition to expand scope without formal change orders	Participant 1
Contractor Cost Pressure	The financial strain on the contractor from unplanned scope expansion	Participant 5
Ambition vs. Scope	The airline pushing turnkey boundaries to include features like digital	Participant 1

	signage and wayfinding	
Virtual Communication Tools	Use of Microsoft Teams, Zoom to overcome geographic distance	Participant 11
Geographic Distance as Barrier	Physical separation between stakeholder locations creating coordination challenges	Participant 11
Centralized System Advantage	End-user perception that centralization brings massive benefits compared to manual silo methods	Participant 11
Post-Implementation Satisfaction	Confirmation that the system is running almost completely smoothly after go-live	Participant 12
All Stakeholders Critical	Operational perspective that every stakeholder matters, contradicting the binary classification	Participant 11
Showstopper	A stakeholder whose approval or access is mandatory; without them, the project stops	Participant 1

Table 5 Inductive codes (Source: self)

4.3.6 Codes Discarded or Merged

Code	Reason	Action
The Greenfield Effect	Only two participants mentioned it	Merged into Theme 5 as a supporting factor
Shift-Based Availability	Always discussed as part of operational overwhelm	Merged into "Operational Overwhelm"
Training Gap	Only one participant mentioned it	Discarded since it did not connect to other themes.

Table 6 Codes discarded or merged (Source: self)

4.3.7 How Deductive and Inductive Codes Interacted

During data analysis deductive codes provide initial insight such as knowing about information asymmetry from agency theory helped me to understand when participants describe about the gap between client and contractor knowledge gap. Plus, some codes are found to be both deductive and inductive. The code Relational architecture has emerged directly from participants mentioning about WhatsApp and phone call. This code is presented as inductive since it emerged directly. But later it aligned with governance concepts in the literature. Also, inductive codes refine and replaced deductive codes. As it is mentioned in the deductive code section power is

replaced by show stopper. And thematic map (shown on section 3.8) presented both inductive and deductive codes together.

4.3.8 Thematic Map with Deductive and Inductive Codes

The following thematic map shows the way of grouping the 7 deductive codes and 16 inductive codes into five final themes

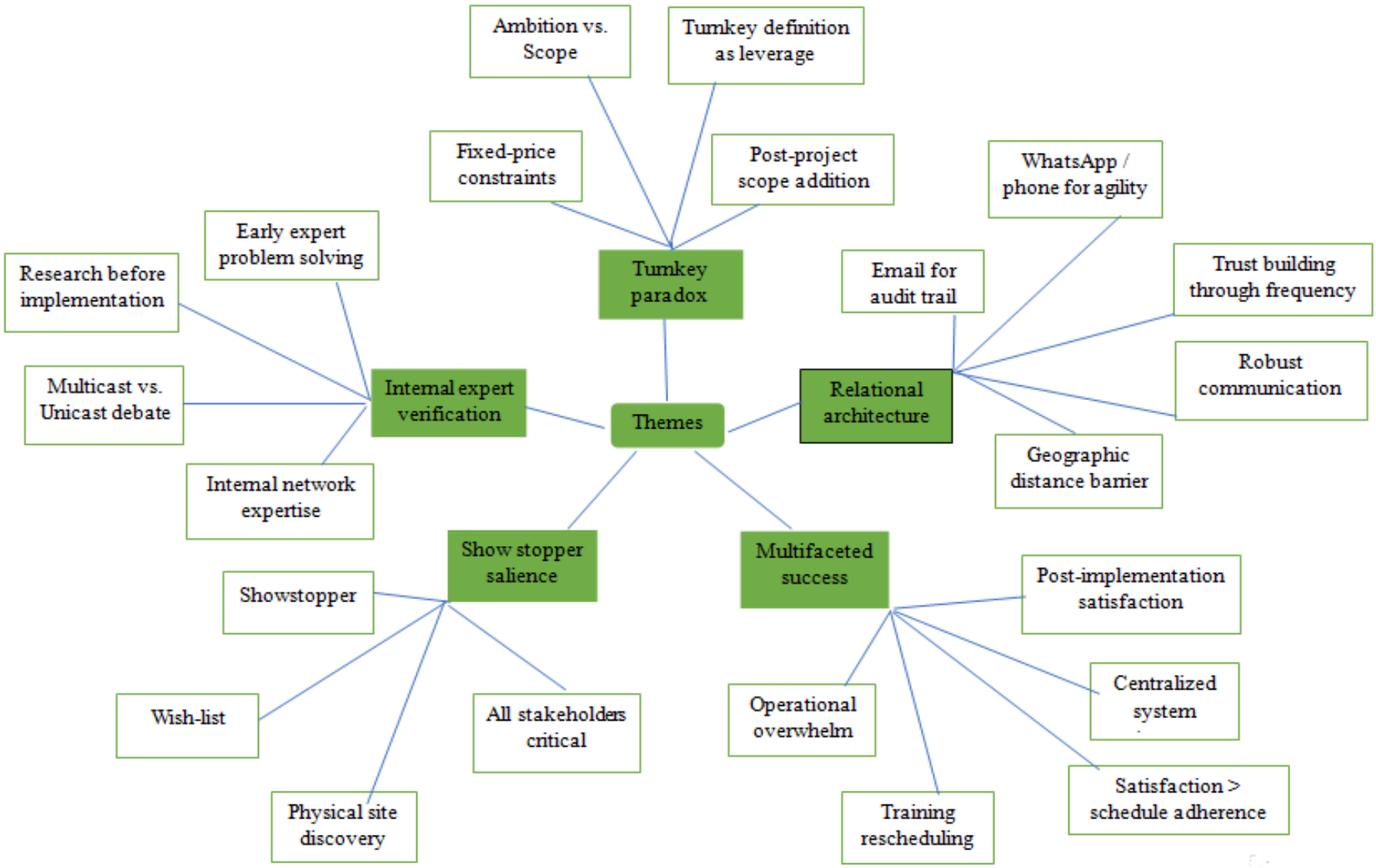


Figure 1 Thematic map (Source: self)

4.4 Generation of Five Themes

After completing coding, five themes emerged. These themes are presented below with supporting quotes and interpretive analysis.

4.4.1 The showstopper vs. wish list dichotomy (Systematic identification through show stopper salience)

Participants describe a process of stakeholder identification through lived experience rather than static organizational chart. Stakeholders were sensed and discovered through physical presence and the alignment of internal processes. This signaled a shift from theoretical mapping to a practical, site-based identification. Where the reality of the infrastructure dictated the importance of the actor. Participant 1(Airline project manager) illustrates how physical site visits were essential to uncover the true owners of content:

> So to identify our stakeholders, we have conducted a lot of interviews. Like it's not a formal interview, but we can say we approached physically. For example, for the hotel lounge... so what we started is, whatever TV content displayed in airport and other areas, we tried to identify who the owner is, then we go to those owners, we discussed with them. So we make sure such owners are stakeholders or not, because some of them, they tell you they are the stakeholders, but at the end of the day, when you see, it's another section which is managing such content management for the project. So physical study of the actual site was one of the methods. (Participant 1)

This physical study highlights a critical governance insight. Formal documentation often fails to capture real power relationships. In a complex environment of Ethiopian Airlines, identifying "who owns the content" is an adaptive response to organizational complexity. Once identified, the participants indicate that they applied a binary logic to prioritize these actors, utilizing the mindful concept of the "Showstopper." This term was used to explain a dynamic of power where certain individuals or teams held the absolute ability to halt progress. Participant 1 further explains this classification between those who held the keys to delivery and those who held secondary desires:

> In our process, we identified so many critical stakeholders who have a direct say on the project or the deliverables. And we also identified some stakeholders who have a wish list. (Participant 1)

The distinction reveals an informal governance structure that exists alongside the formal organizational chart. Criticality was often defined not by title, but by the power of access. In the restricted environment of an airport, legitimacy was derived from the ability to grant or deny entry to the physical and technical part of the operation. Participant 5 and 6 (Contractor technical person) illustrate this operational authority.

> Stakeholders were classified based on their level of decision-making authority and leadership... We classified any stakeholder whose decision was mandatory for the work to continue as a 'showstopper' and therefore a critical stakeholder. (Participant 5)

> Those who gave us a high contribution were the Ethiopian Airlines technical team and the IT team. We couldn't do the work without them. Others were the airline's security staff, as keys for the data rooms were taken from them…. Regarding urgency, specifically for the third terminal and the VIP terminal group, we identified them as urgent because their work could not be interrupted and the started work had to be completed quickly. (Participant 6)

Participant 7 added that criticality often meant controlling access.

> Every stakeholder is critical. For example, to reach a certain milestone, the Security Team might not seem critical until you need access to a room they control. If they don't grant access, the work stops. (Participant 7)

Plus, Participant 11 (Skylight hotel end user) added on Participant 7 description of criticality of every stakeholder from an operational standpoint.

> Everyone is critical according to their scope of work. We don't look at one separately from the other. So all of them are critical. (Participant 11)

This theme shows that stakeholder identification is not a one-time planning activity. It’s an ongoing, physical process. The deeper meaning here is about power in practice not power written in a contract. But power based on who holds the keys (literally and figuratively). In a 24/7

operation of an airline, the people who keep things running safely have real authority, even if they are not high in the management hierarchy.

The "showstopper" model reveals an informal governance structure that exists alongside the formal organizational chart. Ethiopian Airlines' project team learned formal authority (job titles) mattered less than operational authority (who could say "no" to access). This is an important insight for project governance in high-security environments. Stakeholder maps must be dynamic, not static. The project team's method of walking the site and asking "who owns this TV content?" was an adaptive response to the failure of formal documentation to capture real power relationships.

While the project team used a binary classification (showstopper vs. wish-list), Participant 11 viewed all stakeholders as critical. This tension suggests the showstopper model may be a project management simplification that does not fully reflect operational reality. Project managers prioritize for efficiency and operational staff see interdependence. Both perspectives are valid, and this contradiction highlights the need for ongoing communication between project teams and end-users.

According to the project access logs of gate pass renewals show six instances where security team approval was required for contractor site entry between 5/31/23 and 9/16/24. Project reports between 6/12/24 and 6/19/24 show that multicast configuration approval was required from the network team to proceed with the IPTV system implementation.

4.4.2 Internal Expert Verification to Fix Information Gaps

One of the findings is the participants' perception of Internal Experts as a defensive shield. This is against the inherent risks of the turnkey model. Information Asymmetry often creates a vulnerability where the client may become passive. To counter this, the airline utilized specialists to challenge contractor claims. In order to ensure the turnkey nature of the project did not result in a hands-off failure. Participant 5 (Contractor technical person) explains how this expertise allowed the airline to anticipate infrastructure needs:

> Having internal experts allowed the airline to prepare effectively for the work. This was especially useful for systems requiring high bandwidth and internet access, as these experts could prepare the necessary infrastructure in advance. For example, they researched technical questions such as whether to use "multicast" or "single" delivery to ensure the required bandwidth was properly allocated. (Participant 5)

This incident signaled a moment where internal experts moved from passive observers to active protectors of the enterprise network. Participant 4 (Airline network specialist) reflects on the research and fear of interference that drove this intervention:

> As I said, I'm involved on the network part, which means we were able to identify or do a research on the multicast technology of the network so that it doesn't affect the rest of the network. Initially, we were not using multicast across the network because of fear of interference with the rest of the network and performance issues. So, to avoid that, we did a lot of research before we started the implementation part. (Participant 4)

While the contractor possessed product-specific knowledge, the airline's experts held the vital Infrastructure Knowledge. Participant 7(Airline project coordinator) gave a specific example of this expert-to-expert consultation bridging the gap.

> I recall a situation where a contractor claimed a multicast network was mandatory... Our network team challenged this... and it was decided to continue using the multicast environment. It worked successfully. (Participant 7)

Participant 8 (Skylight IT support) and 10 (Contractor Project director) added examples of how early involvement strengthened technical validation, such as identifying power shortages (POE) and optimizing encoding configurations.

> During installation of media players in the Skylight Hotel, after they installed one side of the rooms, there was power shortage from the switch because the media players are POE. This was identified by the network expert from the airline. The problem was solved by adding additional POE adaptors by the airline. (Participant 8)

> Early involvement of airline internal experts significantly strengthened technical validation processes. For instance, airline IT specialists challenged the proposed IPTV

> compression and bandwidth model. This resulted in optimized encoding configurations, improving system efficiency. (Participant 10)

Participant 11, speaking from the end-user perspective, confirmed the value of early expert involvement:

> Identifying these things through our project professionals helped us easily solve problems at an early stage. If it were said 'this doesn't work, that doesn't work' after things were already finished, it would force us to start many things afresh from scratch. (Participant 11)

This is not just about good communication. It’s about correcting an imbalance of power created by information asymmetry. In a turnkey project, the contractor usually knows more about the technology. That is an advantage of power based on knowledge. But the airline used its own experts as a counterbalance. They did not just trust the contractor. They verified. This turned a potential weakness of not knowing the product into a strength of knowing their own infrastructure better than anyone.

The theme reveals a hybrid governance model of the turnkey contract. This is formal part and expert verification that is the informal part. The airline's internal experts acted as a principal monitoring mechanism (in Agency Theory terms). They reducing the risk of opportunistic behavior by the contractor. This is a deliberate organizational adaptation to the limitations of turnkey contracting. Participants 11 and 12 confirm that this early verification had lasting benefits, making handover smoother and post-implementation support easier. This implies technical due diligence is not a one-time activity but an ongoing process throughout the project lifecycle.

As per the internal technical review documents of network multicast verification from 6/12/24 show that the network team formally documented concerns about multicast configuration before approving implementation. And the communication log on Power shortage during media player installation shows the power consumption of each media players (8w) and the total capacity of power supplied by the network switch (740w) and it shows the network team approval of adding 3 PoE adaptors to avoid the power shortage.

4.4.3 The Turnkey Paradox (Navigating Contractual Rigidity in the Turnkey Delivery Model)

The participants viewed the Full Turnkey nature of the contract as both a constraint and a powerful management tool. While Fixed-Price, Fixed-Scope models often lead to rigidity, the participants indicate that they used the very definition of a Turnkey solution to expand the boundaries of the project's deliverables. Participant 1 recalls how the team successfully argued that significant hardware additions were not changes, but rather essential components of a finished system

> The contractor added more than 20 media players. Because our project is turnkey and we requested such features, it was not a change. Fixed price, yes, but that price was based on a turnkey nature. (Participant 1)

However, from the contractor's side, Participant 5 explained the pressure of this Turnkey Paradox.

> The airline's high standards pushed us beyond our typical limits. Requests like streaming multiple TV channels on digital signage required us to add 28 media players and extra equipment like gateways. This created cost pressures on us. (Participant 5)

The contractor argued that "turnkey" means what was specified in the contract. However, the airline argued that "turnkey" means a fully finished solution therefore, any feature necessary for the system to be truly complete was within scope. Participant 7 explained this.

> There was a time when a contractor claimed certain UTP cables were outside the contract. However, after reviewing the agreement, it was clear they were required for the first phase to ensure a workable product. Since the contract mandated a finished product, we handled it according to those terms. (Participant 7)

This is a paradox. The turnkey contract was meant to make things simple one price, one scope. But instead, it became a site of negotiation. Each side interpreted finished solution differently. The airline pushed for more and the contractor felt squeezed. This tells us that in turnkey projects, the contract itself isn't a fixed rulebook it's a starting point for ongoing power negotiation.

The airline's strategy of using the turnkey definition to expand scope represents an institutional adaptation to contractual rigidity. Rather than accepting the contract as a constraint, the airline's project team treated it as a tool for value creation. This challenges Transaction Cost Economics (Williamson, 1985), which assumes that fixed-price contracts reduce flexibility. Here, flexibility was achieved not by changing the contract, but by re-interpreting it's terms. But this came at a cost to the contractor raising questions about fairness and risk distribution in turnkey contracting. Participants 11 and 12, viewing from the end-user perspective, saw only the flexibility not the cost pressure which highlights how the same contractual arrangement can be experienced very differently by different stakeholder groups.

The original scope of work listed 100 media players on the Contract agreement between Ethiopian Airlines and ATI but final as-built documentation on Supply, Design and Installation of IPTV System at Bole International Airport, Terminal1, Terminal2 and VIP Terminal Project Handover document on September 30, 2024 shows 128 media players and additional 1 gateway, 20 patch cord, 1 roll UTP cable, HDMI cables and 2 Patch panels installed, with a note that these devises were added under turnkey justification.

4.4.4 Relational Architecture in Reconciling Conflicting Goals

The participants reveals that the project faced a major Hold-up problem regarding the re encryption of encrypted channels. The conflict arose when the contractor's goal (speedy delivery of unencrypted streams) clashed with the airline's legal obligations (re encryption of encrypted channels). This required a total equipment replacement of 100 media players. Participant 6 and 5 described the weight of this realization.

> For example, we intended to make encrypted channels stream without re encryption, but we learned from the airline team that according to their agreement with the satellite provider, the streams must be re encrypted. I remember it was a time that required changing all the 100 media players. (Participant 6)

> This created a clash between legal requirements and the contract because the relevant laws had not been communicated early. This led to project delays and additional costs. (Participant 5)

To prevent these conflicting goals from ending in project failure, the participants describe the development of a Relational Architecture. This was a hybrid communication strategy that balanced formal accountability with informal trust. Participant 3 (Airline network administrator) highlights how the frequency of contact and the use of the phone calls allowed them to bypass formal rigidities.

> Fortunately, we had a good relationship with the contractor. By a good relationship, I mean that while conflicts often arise during work, we accepted what they said and they accepted what we said. The frequency could be daily, or even two or three times a day or more. Some was formal communication via email, but mostly we finalized things over the phone. That means we had good informal communication, which made a good contribution. (Participant 3)

The mix of WhatsApp for agility and Email for the Audit Trail allowed the teams to investigate and solve problems together rather than blaming one another. Participant 4's experience shows a culture of collaborative troubleshooting.

> On this project, what I saw was the contractor would look at the problem and, if they think that it's something to do with the network, they give us an explanation of why they think it's a network problem. Then we'll take the issue, we'll investigate, and if we think that it's a network issue, we try to solve it ourselves. Some of them we did that by ourselves, and some of them we had to return to the contractor to solve it. So that's how we did. (Participant 4)

Participant 10 emphasized that this framework ensured transparency and traceability.

> A robust communication framework was implemented, including: Weekly progress meetings, Daily coordination during critical phases, Formal documentation (MoMs, RFIs, technical submittals, progress reports). This ensured transparency, traceability, and alignment, forming a strong relational architecture between the airline and project stakeholders. (Participant 10)

Participant 11 added that virtual tools (Teams, Zoom) also played an important role. Especially when stakeholders were geographically separated. This implies relational architecture must now include digital tools as core components, not just optional additions.

> Since you might not find everyone in one physical place, instead of meeting in person, you rely on electronic communication channels. For instance, we used tools like Microsoft Teams, Zoom... we utilized these virtual meeting rooms to communicate and collaborate, in addition to formal email communication. (Participant 11)

The formal contract did include provisions for re-encryption, specifying channel encryption options such as AES, Pro idiom, or Samsung Lynk. But the initial failure to implement this requirement reveals not a gap in contractual documentation, but rather a breakdown in contract execution and oversight. What saved the project was the relational architecture the mix of fast, informal tools (WhatsApp, phone) for solving problems quickly, and formal tools (email) for keeping records. But deeper than tools, it was trust. The technical teams investigated problems together instead of blaming each other.

This case demonstrates that formal contracts provide the necessary technical roadmap. While project resilience depends on active compliance monitoring and strong relationships between boundary-spanning. This leads to who can adapt informal governance to resolve procedural failures

As shown on the project communication log on email trail, what's app chats, Microsoft teams meeting recordings show that between the design and implementation phases, the project team utilized high-frequency virtual meetings and electronic channels to align feedback and exchange notes, supplementing formal email documentation. The contract agreement between Ethiopian Airlines and ATI on February 1,2023 review confirms that re-encryption was specified (AES, Pro: Idiom, Samsung LYNK options), but implementation tracking did not flag the omission until late in the deployment phase.

4.4.5 Overcoming Operational Overwhelm for Multifaceted Success

The participants perceived the project as a success. Because it satisfied Perceived Value rather than just ticking boxes on a technical specification. Even though the project faced Operational

Overwhelm and schedule slippages, the Quality and Satisfaction metrics rated exceptionally high. Participant 1 provides a detailed description of how the system exceeded expectations by replacing a siloed USB-based method with a centralized, 24/7 control.

> Their expectation was you open a TV and you get a channel... Now they can choose a channel, open flight info, watch video on demand... Before, the security team used USB sticks. That was silo method. Now it is centrally managed. This exceeded the expectation of the business. (Participant 1)

Participant 11 also noted how the system exceeded expectations:

> We can roll out features not found on traditional TV systems, like advertisements, welcome messages. These are all tailored to the customer. They add extra satisfaction for the guests. (Participant 11)

The life of the project's success is found in the joy and satisfaction expressed by those in the lounges and terminals. Participant 6 and 8 reflects on the happiness of the stakeholders, which suggests that in the world of aviation IT, user satisfaction carries more weight than strict adherence to time or cost metrics

> Based on feedback from various airline groups and lounges, I understood they were happy local streams, local television, DSTV, entertainment, sports, information, videos on one stream. The VIP terminal, lounges, technical team, and Skylight Hotel teams were happy. (Participant 6)

> As I am an advertising team, my feedback helps the IPTV system meet our passengers' needs. Because we know our passengers' needs more than contractor. …I believe that they are satisfied. (Participant 8)

Participant 10 the contractor project director added on the level of satisfaction

> Overall stakeholder satisfaction is assessed as high, driven by: Transparent communication, Structured engagement processes, Responsiveness to feedback. Regular

> workshops and review sessions were particularly impactful in building trust and alignment.

Participant 12 (Airline operation support) confirmed post-implementation satisfaction:

> Because with the previous system, it used to freeze frequently. Everything had to be done manually. It didn't run from a single source. It wasn't centrally managed, and since each unit was individual, it was very problematic to address every single problem. In the current situation, we are running almost completely smoothly, and we are managing fine. (Participant 12)

However, there were barriers. Participant 1 named the biggest one:

> The biggest barriers, I can say, is being busy or overwhelmed by different operational activities. And that gave us somehow difficulty in making sure the right stakeholder comes to the meeting or, let's say, to the technical discussion, or to the handover stage at the right time…getting the operational team and giving the knowledge transfer was difficult because they were busy. (Participant 1)

Participant 11 added a different perspective on barriers:

> Basically, the main challenge stems from having different physical locations, meaning you might not get hold of people on time when issues crop up. That would be one logistical challenge. Plus, when the Project Office first launches a project, the parties it chooses to involve early on carry a lot of weight. If it fails to involve key stakeholders right at the start, trying to loop them in later creates a bit of a bottleneck. (Participant 11)

Even if barriers resulted in rescheduling of trainings repeatedly this reveals that success isn’t just about time and money. The "iron triangle" (on time, on budget, on scope) is too narrow. In this project, the schedule slipped, but users were delighted. That is a different kind of success one that values perceived value over perfect compliance. For the airline, a system that makes passengers happier and staff more efficient is worth waiting for.

This theme challenges the dominant project management paradigm that prioritizes schedule adherence. The airline's stakeholders effectively redefined success to mean “user satisfaction” rather than “on-time delivery.” This is an institutional adaptation the organization's culture which prioritizes passenger experience overrode formal project metrics. The implication for project governance is that success metrics should be negotiated with stakeholders at the outset, not imposed by project management frameworks. From the end-user perspective, the system's centralized nature and smooth operation far outweighed any delays during implementation.

According to post-implementation satisfaction surveys and handover documents rate the overall user satisfaction highly, with a significant majority of respondents agreeing that the centralized system exceeded expectations.

4.4.6 Contradictions and Competing Perspectives in the Data

A rigorous qualitative analysis does not ignore contradictions in the data. Instead, it highlights them as sources of deeper insight. Below are the key contradictions that emerged across the 12 interviews, along with what they reveal about stakeholder management in turnkey projects.

I. "Showstopper" binary vs. "All stakeholders are critical"

Perspective	Participants	Quote
Binary classification	P1, P5	"We identified critical stakeholders and stakeholders with a wish list."
All are critical	P7, P11	"All of them are critical. Everyone is critical according to their scope of work."

Table 7 Show stopper binary vs. All stakeholders are critical (Source: self)

What this contradiction reveals: (P1, P5) need simplification to prioritize limited resources. (P7, P11) experience the interconnectedness of the system and cannot afford to label anyone as marginal. This tension isn’t a flaw in either perspective it’s a structural feature of large projects. The implication is that stakeholder classification should be context-dependent. It’s critical for project decision-making, but all stakeholders should still receive communication.

II. Contractor cost pressure vs. Client perceived flexibility

Perspective	Participants	Quote
Contractor felt squeezed	P5, P6	"This created cost pressures on us... additional costs for bringing and returning equipment were incurred."
Client saw flexibility	P1, P11, P12	"It was not a change... it's comfortable, I believe it's flexible."

Table 8 Contractor cost pressure vs. Client perceived flexibility (Source: self)

This reveals the same contractual arrangement (turnkey, fixed-price) was experienced very differently by the two parties. This is consistent with Agency Theory's prediction of goal divergence, but it also reveals something deeper. Power asymmetry in interpretation. The client had the authority to define what "finished" meant. The contractor had to absorb the cost of that interpretation. This contradiction highlights the importance of clear scope definition upfront. But also suggests that in turnkey projects, the client holds significant interpretive power.

III. Operational overwhelm vs. Geographic distance as primary barrier

Perspective	Participants	Quote
Operational overwhelm	P1, P3, P8	"The biggest barrier was being busy or overwhelmed by different operational activities."
Geographic distance	P11, P12, P5,P6	"The main challenge stems from having different physical locations."

Table 9 Operational overwhelm vs. Geographic distance as primary barrier (Source: self)

What this contradiction reveals: Different stakeholder groups experienced different barriers. The project team (P1, P3, P8) struggled with getting operational staff to attend meetings. Operational staff (P11, P12) struggled with the logistics of coordinating across locations. Neither is wrong. This contradiction suggests that barriers are role-dependent. Effective stakeholder management must address multiple types of barriers simultaneously.

IV. Schedule delays vs. High satisfaction

Perspective	Participants	Quote
Delays acknowledged	P1, P3, P5, P10	"There was some delay... it created some delay."
High satisfaction	P1, P6, P8, P10, P11, P12	"They are happy... it brings massive benefits... running almost completely smoothly."

Table 10 Schedule delay vs. high satisfaction (Source: self)

This shows that the most important contradiction in the data. Traditional project management would call a delayed project a failure. But stakeholders called it a success. This contradiction challenges the universality of the "iron triangle" (time, cost, scope) as the sole measure of project success. In this context, value creation (a centralized system, new features, passenger satisfaction) outweighed schedule adherence. The implication is that project success metrics should be co-created with stakeholders, not imposed by methodology.

These contradictions were handled rather than smoothing over these contradictions or choosing one perspective over the other. The study treats them as analytical resources. Each contradiction reveals something about the complexity of stakeholder management in turnkey projects. It’s power dynamics, role-based perceptions, and the need for context-dependent success metrics.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The findings show that the turkey contract in Ethiopian Airlines resulted a shift in the internal network team from doing technical work to monitoring and governing the contractor. This is resulted from strong technical knowledge of the airline network infrastructure enough to challenge the contactor claims. Without this internal expertise, the turnkey model exposes the client to information asymmetry. Although the turnkey contract is rigid in nature, the airline expertise argued and redefined finished solution to expand value. There were also conflicts emerged during implementation regarding re-encryption of channels but it is successfully mitigated by the relational architecture developed between the airline and contractor. Even though the project faced delays due to operational overwhelm and replacement of equipment's, it exceeded the expectation of stakeholders as result of added features and values on the system. In a turnkey IPTV implementation, stakeholder management acts as the connective tissue that overcomes the limitations of a fixed contract. Ethiopian Airlines successfully navigated the inherent risk of the turnkey model to deliver a high value system. This is accomplished by using internal experts to bridge the information gap, redefining the turnkey model to secure quality, and using informal relational networks to solve legal or technical conflicts.

5.2 Conclusions

Based on the result from the data analysis, I derived the following four conclusions summarized according to the objectives of the study.

I. The first objective was to examine how identification and prioritization address information asymmetry. The result shows that Ethiopian airlines used a showstopper salience model rather than listing stakeholder on paper. This aligns with Mitchels et al, (1997) stated about power, legitimacy and urgency. In Airport, power comes from controlling access. But Participant 7 and 11 described "all stakeholders are critical" adds nuance. Project team used binary classification to prioritize stakeholders. But operational end users viewed every stakeholder as critical with in their scope.

The prioritization addresses the issue of information asymmetry. The contractor have more knowledge about the technology. But the airline uses its experts as internal shield. For example, multicast vs. unicast debate. This approves that stakeholder management is about using internal expertise as a governance mechanism in turnkey projects.

This showstopper salience model may be specific to 24/7 high security environments like aviation. In other areas with less security environments, the power of access may not be applied. So, the finding should not be over extended to all turnkey projects.

II. The second objective evaluated engagement strategies in the face of contractual rigidity. This study found turnkey paradox. Transaction cost economics theory (Williamson, 1985) states that turnkey contracts minimize coordination costs and can be too rigid. On the contrary, the airline used the rigidity to expand value. Arguing that a finished solution must include features of streaming encrypted channels on digital signage screens. So, they received extra 20 media players and a gateway free of charge.

The definition of finished becomes a platform for negotiation. Here a rigid contract became a tool for quality assurance. The client felt the system flexibility and responsiveness. But the contractor experienced cost pressures.

This turnkey paradox may depend on client having strong internal technical expertise to interpret and enforce the contract. In sectors where the client lacks these expertise , the paradox may not emerge.

III. The third Objective examined mechanisms to reconcile conflicting stakeholder goals. Agency Theory (Eisenhardt, 1989) warns that contractors and clients have different goals. The re-encryption conflict was a perfect example. The contractor wanted speed and low cost while the airline wanted legal compliance.

This conflict was resolved by relational architecture. A combination of informal and formal communication tools that develop trust. Both sides of client and contractor technical teams investigated problems together rather than blaming each other. This

aligns with Cingöz and Durmaz (2024) argument about the quality of stakeholder interactions determining how resilient a project is.

IV. Finally, the fourth objective evaluated the impact of stakeholder management practice on project success. The project faced Operational Overwhelm due to the 24/7 nature of the airport, which impacted traditional Iron Triangle metrics. But the findings show high level of stakeholder success.

Regarding quality, the project got advantage from the active engagement and feedback of stakeholders. The network teams refused to compromise on standards. So, they approved addition of POE injectors and configuration of multicast technology. This ensured a robust infrastructure. On the other hand, the advertising team's involvement in the portal design refined the system's functional appeal.

The project schedule experienced slight delays. This is due to operational overwhelm and the replacement of media players. These setbacks were effectively mitigated by the contractor's flexibility and the relational architecture developed.

From a financial perspective, the proactive identification of internal expertise and existing hardware like network switch and POE injector allowed the airline to control its costs. But quality increased the cost on the contractor's side due to the additional equipment required to meet the airline's standards.

The project's success is evident in the high level's stakeholder satisfaction. The final system delivered integrated features like flight information and PMS integration that far exceeded the expectation of stakeholders. This aligns with Stakeholder Theory (Freeman, 2010). Freeman suggested that success in complex project should be measured by the creation of value for a diverse network of stakeholders instead of achieving a static budget.

The finding that stakeholder satisfaction outweighs schedule adherence may be unique to organizations with strong service culture like Ethiopian Airlines. In organizations where cost and schedule are the primary drivers, stakeholders may not be compromising delays. So, the finding should be applied cautiously to other sectors.

5.2 Recommendations

Based on the findings of the study, the following recommendations are provided to improve the management of future turnkey technology projects in Ethiopian Airlines.

For Ethiopian Airlines

I. Ethiopian Airlines should conduct a physical site-based stakeholder mapping exercise before signing any turnkey contract. The showstoppers must be included from the beginning, not discovered later. But also, the project team should maintain communication with stakeholders classified as wish-list. Because they may become critical later.

II. The airline should formally assign internal technical reviewers to any turnkey project involving new technology. These experts should have the authority to challenge contractor claims and the time to research technical questions before implementation. This role should be written into the project governance structure, not added as an afterthought.

III. The airline should define turnkey completion in very specific, detailed terms at the outset. Any feature that might become important later should be explicitly included or excluded in the contract. This front-loading of stakeholder identification will reduce the need for informal negotiations and lower the risk of contractor cost pressures.

IV. Ethiopian Airlines should establish joint problem-solving protocols with contractors before work begins for all major digital projects. This means agreeing on how to handle unexpected technical or legal issues including escalation paths, communication tools like shared WhatsApp groups for urgent issues, regular virtual meetings via Teams or Zoom, and regular joint technical reviews. Formal communication should be kept for records, but informal channels should be allowed for speed.

V. The airline should adopt a Project Champion model for 24/7 departments. Each shift-based team (e.g., AOCC, network operations, security, hotel operations) should designate one or two people who are partially freed from daily duties to serve as dedicated project liaisons. This ensures these critical stakeholders can attend meetings, review designs, and provide feedback without rescheduling of tasks to keep their involvement.

For contractor

I. On the other hand, to avoid the turnkey paradox the contactor should prepare pre contract negotiations to include detailed scenarios of what constitutes a fully finished solution to minimize conflicts during implementation.

5.3 Directions for Future Research

In order to make the findings of this study broad and more completed, the following study areas are believed to add value.

- Researchers could do a comparative study between turnkey and Agile delivery models to investigate whether the same relational architecture emerge, or it’s unique to turnkey rigidity.
- Researchers could investigate operational overwhelm as a formal risk category in project management.
- A longitudinal study could examine whether the relational architecture persist, or reset with every new contract.
- Researchers could examine the conditions that project managers' binary stakeholder classifications conflict with operational staff's view that all stakeholders are critical. And how these competing perspectives be reconciled in project governance.

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APPENDIX

Semi-Structured Interview Guide

Part 1: Participant Profile

1. What was your specific role and responsibility during the IPTV project implementation?
2. Which specific milestones of the implementation were you most active in?

Part 2: Stakeholder Identification & Prioritization

3. What systematic tools or processes were used to identify the diverse groups?
   Probe: who was involved in this identification? How were these tools chosen?
4. How did the project team determine which stakeholders were critical versus marginal?
   Probe: What criteria were used (e.g Power, urgency)?
5. How did identifying internal experts early help the airline verify the contractor's technical claims?
   Probes: Can you give a specific example of a time an expert challenged a technical claim? What was the outcome?

Part 3: Engagement Strategies & Turnkey Dynamics

6. How did the fixed-price/fixed-scope nature of the contract affect stakeholder requests for changes?
   Probe: Describe a time a stakeholder asked for a change not in the contract. How was this resolved?
7. How did having one main contractor help or hinder the team's ability to handle concerns from smaller groups?
8. How would you describe the frequency and structure of project communication?
   Probe: Were there formal documentation standards? How effective were these in maintaining relational architecture between the airline and the contractor?

Part 4: Conflict Resolution & Goal Divergence

9. Describe a time when the contractor's goal conflicted with the airline's goal?
   Probe: What was the root cause of this divergence? What were the consequences?
10. How did the airline and vendor work together to solve technical problems?

Part 5: Project Implementation Success

11. In what ways did stakeholder engagement influence the time, cost, and scope and quality metrics?
    Probes: Did engagement help or delay the schedule? How?
        How did stakeholder feedback impact the budget?
        How did stakeholder participation impact the scope of the system?
12. How did stakeholder feedback help or hinder the IPTV system meet the needs of passengers and staff?
13. Beyond the technical specifications, do you believe the key stakeholders are satisfied?
    Probe: Which specific engagement practice contributed most to the feeling of success or failure?
14. What were the biggest barriers to effective stakeholder management in this project?

    Probe: How were they mitigated?