

RIYADH BUS FEASIBILITY STUDY

Executive Summary

This feasibility study evaluates the strategic opportunity to deploy LED digital advertising technology across the Riyadh bus network operated by the Public Transportation Company (PTC), a subsidiary of Saudi Public Transport Company (SAPTCO). The analysis is grounded in PTC's robust financial foundation, which demonstrates urban transport revenue of SAR 704 million for the first nine months of 2025, representing a substantial 23% year-over-year growth from SAR 573 million in the comparable period of 2024. With total urban transport assets valued at SAR 2,654 million and a strategic partnership model combining SAPTCO's 80% ownership with RATP Development's 20% French transit expertise, the organization possesses the institutional capacity to successfully implement a comprehensive LED advertising infrastructure program.

The financial opportunity is compelling. Conservative projections indicate that LED advertising revenue could generate between SAR 45 million and SAR 120 million annually within five years of full operation, representing a meaningful contribution to the urban transport segment's bottom line. This revenue stream would be derived from three primary sources: exterior bus advertising displays, interior digital signage, and station-based digital advertising networks. The investment required to establish this infrastructure is estimated at SAR 180-280 million over a 24-month implementation period, with an anticipated payback period of 4-6 years under base case assumptions.

The implementation framework proposed herein follows **a three-corporate-entity structure comprising a holding company for strategic oversight, an asset company to own the LED infrastructure, and an operating company to manage advertising sales and content operations.** This structure mirrors proven models from successful transit advertising operations globally and aligns with Saudi corporate governance requirements. The analysis incorporates comprehensive risk modeling using Monte Carlo simulation, actuarial methods, and economic uncertainty frameworks to stress-test revenue projections against multiple adverse scenarios.

The recommendation is to proceed with Phase 1 planning and corporate structure establishment immediately, followed by a staged LED procurement and installation program over 18-24 months.

Key success factors include securing preferred technology partnerships with established providers such as Planar and Leyard, establishing robust insurance coverage including, business interruption and equipment breakdown protection, and developing a bank-arranged sinking fund structure to guarantee revenue continuity and debt service obligations. The total project presents a favorable risk-adjusted return profile that warrants proceeding to detailed engineering and financial structuring.

MONETISING MOBILITY: THE BUSINESS CASE FOR RIYADH'S BUS ADVERTISING NETWORK

THE OPPORTUNITY

BUILT ON A STRONG, GROWING TRANSIT NETWORK

PTC Urban Transport Revenue Growth:
+23% YoY to SAR 704 MILLION



THREE HIGH-POTENTIAL DIGITAL ADVERTISING STREAMS



BUS EXTERIORS
Dynamic digital ads and rear
det doesw usenereze with
digital ads and rear.



INTERIORS
Onboard digital screens
ensure to content to public
digital advertisers.



HIGH-TRAFFIC STATIONS
Large bus traffic stations
and interactive scations with
digital ads nnovectivity

PROJECTED ANNUAL REVENUE:

SAR 45M - SAR 120M

(within five years of full operation)

THE FINANCIAL CASE (BASE CASE SCENARIO)

TOTAL CAPITAL INVESTMENT:
SAR 255 MILLION
Over a 24-month implementation period

IRR (INTERNAL RATE OF RETURN):
24%
Exceeds typical infrastructure investment hurdles

PAYOUT PERIOD:
4.1 YEARS
Achieves cash flow breakeven rapidly

PROJECTED REVENUE GROWTH (FIRST FIVE YEARS)



Based on a recent feasibility study proposing the deployment of an LED digital advertising network.

NotebookLM

1. Introduction

The Kingdom of Saudi Arabia's Vision 2030 initiative has catalyzed unprecedented transformation in the nation's urban infrastructure, with particular emphasis on modernizing public transportation networks to serve a rapidly growing and increasingly urbanized population. The King Abdulaziz Project for Public Transport in Riyadh stands as one of the most ambitious transit development programs in the Middle East, encompassing an extensive network of buses, stations, and supporting infrastructure designed to revolutionize mobility in the capital city. As this infrastructure reaches operational maturity, there emerges a strategic opportunity to leverage these assets for revenue generation through the deployment of LED digital advertising technology.

This **feasibility study examines the commercial viability of establishing a comprehensive LED advertising platform across the Riyadh bus network and associated transit facilities**. The analysis draws upon the operational and financial data of the Public Transportation Company, which currently manages urban transport operations under a joint venture structure between SAPTCO and RATP Development.

PTC's nine-month 2025 revenue of SAR 704 million from urban transport operations provides the baseline from which new advertising revenue streams would be developed. The study evaluates technology options from leading global manufacturers, projects revenue potential based on comparable transit advertising markets, and models financial returns under conservative, base, and optimistic scenarios.

The scope of this analysis encompasses the full lifecycle of the proposed LED advertising initiative, from initial corporate structure establishment through full operational deployment and long-term financial performance. The analysis applies rigorous risk assessment methodologies, including Monte Carlo simulation for revenue scenario modeling, actuarial methods for insurance cost estimation, and economic uncertainty frameworks to evaluate resilience against macroeconomic shocks.

2. Company Background and Operational Context

2.1 Saudi Public Transport Company (SAPTCO)

Saudi Public Transport Company represents the Kingdom's premier mass transit operator, having been established through Royal Decree No. M/11 dated 7 Rabi' 1 1399H (corresponding to 5 February 1979). The company operates as a Saudi Joint Stock Company with shares publicly traded on the Saudi Stock Exchange, providing both intra-city and inter-city passenger transport services throughout the Kingdom.

Beyond core transportation services, SAPTCO's operational portfolio extends to **school transport, teacher transportation, vehicle rental, bus dealership**, maintenance services, and logistics operations.

The company's organizational structure reflects a strategic diversification into multiple business segments that collectively generated total revenues of SAR 1,209 million for the nine-month period ending 30 September 2025, compared to SAR 1,148 million in the prior year period. This revenue composition includes intercity transport services generating SAR 133 million, specialized services contributing SAR 307 million, digital mobility solutions at SAR 45 million, and technical shared services adding SAR 19 million. The urban transport segment, operated through the Public Transportation Company subsidiary, represents the largest single revenue contributor at SAR 704 million for the nine-month period, demonstrating its central role in the group's overall financial performance.

SAPTCO's balance sheet strength provides a solid foundation for new capital investments. Total assets across all segments reached SAR 4,570 million as of 30 September 2025, with total liabilities of SAR 3,104 million resulting in equity of SAR 955 million. The company maintains substantial property and equipment holdings of SAR 1,168 million and intangible assets of SAR 630 million, the latter primarily representing PTC's contractual rights in the residual value of buses, Demand Responsive Transport vehicles, and depot facilities upon project completion. The share capital structure of SAR 1,250 million, divided into 125 million shares at SAR 10 each, reflects the company's substantial scale and financial capacity.

2.2 Public Transportation Company (PTC) - Riyadh Operations

The Public Transportation Company operates as the execution arm of the King Abdulaziz Project for Public Transport in Riyadh, which constitutes one of the most comprehensive urban transit initiatives ever undertaken in the Middle East region. PTC was established in 2014 as a Limited Liability Company under commercial registration number 1010429250, with its core mandate being the importation, operation, and maintenance of buses across the Riyadh metropolitan area under license from the Ministry of Investment.

The ownership structure of PTC reflects a deliberate partnership between local transit expertise and international best practices. SAPTCO holds an 80% ownership stake, while RATP Development, the French transit operator with global experience in managing complex urban transportation networks, holds the remaining 20%. This joint venture arrangement has enabled PTC to benefit from RATP's decades of operational knowledge in areas including route optimization, fleet management, customer service protocols, and revenue diversification strategies. The paid-up capital of SAR 10 million, while modest relative to the scale of operations, establishes the legal entity framework within which substantial investment programs can be structured.

PTC's operational results demonstrate consistent growth trajectory. The nine-month 2025 urban transport revenue of SAR 704 million represents a 22.9% increase over the SAR 573 million recorded in the comparable 2024 period. This growth rate significantly outpaces general inflation and reflects both increased ridership and expanded service coverage. The segment's total assets of SAR 2,654 million, comprising primarily buses, depot infrastructure, and related equipment, represent the asset base upon which LED advertising infrastructure would be deployed. PTC's intangible assets of SAR 588 million, representing rights in residual bus and depot values, demonstrate the long-term contractual certainty underlying the operation.

2.3 The King Abdulaziz Project for Public Transport

The King Abdulaziz Project for Public Transport in Riyadh represents the Kingdom's most significant urban transportation development initiative outside of the metro systems being developed in multiple Saudi cities. The project encompasses the deployment of an extensive bus fleet, the construction of hundreds of bus stations and stops across the metropolitan area, and the establishment of supporting depot and maintenance facilities. **The scale of this infrastructure creates substantial opportunities for advertising revenue generation through both vehicle-mounted and station-based displays.**

The project's strategic importance to Saudi Vision 2030 objectives ensures continued government support and operational stability. PTC's revenue composition shows approximately SAR 595 million derived from government entities during the nine-month 2025 period, providing significant revenue visibility and credit quality. The receivables balance from government entities of SAR 1,109 million, compared to SAR 165 million from private sector counterparties, demonstrates the strong cash flow characteristics of the core transportation business. This revenue stability provides an attractive foundation for adding advertising revenue streams that would further diversify income sources and reduce concentration risk.

The physical infrastructure of the King Abdulaziz Project creates natural advertising opportunities across multiple touchpoints. **Bus exteriors offer high-visibility platforms for dynamic digital displays visible to pedestrians and motorists throughout the city. Bus interiors provide captive audience exposure opportunities for advertising content displayed on screens throughout the passenger cabin.** Most significantly, the hundreds of bus stations scattered throughout Riyadh represent prime advertising locations where digital displays can reach waiting passengers and passersby in high-traffic urban environments. **This multi-channel advertising ecosystem represents the core revenue opportunity** this feasibility study evaluates.

3. LED Technology Revenue Opportunity Analysis

3.1 Digital Advertising on Buses

The deployment of LED advertising displays on the Riyadh bus fleet represents the foundational element of the proposed revenue generation strategy. Exterior bus advertising offers unparalleled visibility across the metropolitan area, with each bus serving as a mobile billboard that traverses high-traffic corridors and reaches diverse demographic audiences throughout the day. Interior digital displays provide complementary revenue opportunities by targeting captive passengers during their journey, enabling longer-form content engagement and interactive advertising experiences.

Exterior LED displays for bus applications must balance visibility requirements with technical specifications appropriate for the demanding transportation environment. Industry-leading providers such as Planar and Leyard offer transportation-specific LED solutions with pixel pitches ranging from 0.9mm to 20mm, brightness levels exceeding 5,000 nits for sunlight readability, and operational durability ratings spanning 50,000 to 100,000 hours.

The Planar DirectLight Ultra Series and Leyard LN Series represent premium options for pixel pitch applications where viewing distances are limited, while the Planar Luminate Ultra Series provides cost-effective solutions for exterior applications requiring high brightness and durability over viewing distances typical of bus side and rear displays.

Market research indicates that transit advertising generates substantial revenue in comparable global markets. **New York's Metropolitan Transportation Authority derived approximately \$156 million in advertising revenue during 2022**, demonstrating the scale potential for large metropolitan transit systems. The Charlotte-Area Transit System secured a five-year contract valued at \$2.6 million with a transit advertising company, providing a benchmark for smaller-market opportunities.

For the Riyadh context, conservative estimates suggest exterior bus advertising could generate SAR 15-25 million annually upon full fleet deployment, with potential to reach SAR 35-50 million under favorable market conditions.

Interior bus advertising presents additional revenue opportunities through digital signage systems positioned throughout the passenger cabin. **These displays can deliver dynamic content including advertisements, real-time route information, public service announcements, and entertainment programming.**

The captive nature of the passenger audience, typically spending 20-45 minutes per journey, enables higher engagement rates than outdoor advertising formats. Interior advertising revenue is estimated at SAR 5-10 million annually at full deployment, with potential upside as the advertising sales organization develops relationships with regional and international advertisers.

3.2 Bus Station Advertising Network

The bus station advertising opportunity represents potentially the most valuable component of the proposed LED advertising ecosystem. Unlike mobile bus advertising, station-based displays occupy fixed premium locations in high-traffic urban areas where passengers and pedestrians encounter advertising content during waiting periods. **The psychological research on transit advertising indicates that waiting passengers demonstrate higher engagement with displayed content compared to viewers of outdoor advertising in other contexts, as the waiting period creates natural attention opportunities.**

Station advertising formats span a broad spectrum from traditional static posters to sophisticated digital LED displays. The highest-value format for major stations involves large-format LED video walls capable of displaying dynamic content, video advertisements, and interactive experiences.

These installations can command premium advertising rates due to their impact, flexibility, and the extended viewing times they enable.

Secondary station formats include smaller digital displays, interactive information kiosks with branded content integration, and backlit poster cases with digital content management capabilities.

The Saudi Arabia digital out-of-home advertising market generated revenue of \$156.2 million in 2024 and is projected to reach \$234.3 million by 2030, representing a compound annual growth rate that significantly exceeds global averages. Within this market, transit advertising holds a substantial share, reflecting the Kingdom's investment in modern transit infrastructure and the advertising community's recognition of transit audiences' demographic value.

For Riyadh bus stations specifically, station advertising revenue potential is estimated at SAR 20-40 million annually at full deployment, with the range reflecting variation in station sizes, passenger volumes, and location characteristics across the network.

The station advertising opportunity extends beyond traditional display advertising to encompass naming rights, sponsorships, and experiential marketing activations. Major stations could potentially command naming rights or presenting sponsorships from major brands seeking association with the transformative transit initiative. These sponsorship arrangements, while complex to structure and negotiate, can generate significant long-term revenue while providing brands with meaningful platform integration. Initial estimates suggest sponsorship revenue could contribute an additional SAR 5-15 million annually at full network deployment.

3.3 Technology Provider Assessment

The selection of LED technology providers represents a critical decision that will influence both capital costs and long-term operational performance. Two manufacturers emerge as leading candidates based on global market position, product specifications relevant to transportation applications, and regional support capabilities: **Planar and Leyard**.

Both companies maintain substantial market share in the fine pitch LED display segment and offer product lines specifically designed for transportation environments.

Planar, headquartered in the United States and now operating as a Leyard company, maintains a comprehensive portfolio of LED video wall solutions spanning pixel pitches from 0.6mm to 20mm. The Planar DirectLight Ultra Series delivers the finest pixel pitches for applications requiring close viewing distances, while the Planar Luminate Ultra Series provides high-brightness solutions optimized for exterior and high-ambient-light applications. Planar's transportation portfolio includes installations at major airports, transit stations, and transportation centers globally, demonstrating proven capability in this demanding application environment. Pricing for Planar LED products ranges from entry-level packages starting around \$749 for smaller displays to premium installations exceeding \$173,000 for large-format video walls with advanced processing capabilities.

Leyard, headquartered in China and operating globally, represents the largest LED display manufacturer worldwide with extensive experience in transportation applications. The Leyard LN Series and VDS Series provide fine pitch solutions in convenient cabinet sizes with pixel pitches of 0.9mm, 1.2mm, 1.5mm, and 1.8mm, enabling flexible configuration for various installation requirements. Leyard's global service network and regional support capabilities make them a strong candidate for the Riyadh deployment, with the added benefit of competitive pricing relative to premium alternatives.

The recommended procurement strategy involves establishing preferred supplier relationships with both Planar and Leyard, enabling competitive tension during procurement while ensuring access to complementary product capabilities. For exterior bus applications requiring high brightness and durability, Leyard's outdoor-rated products may offer superior value. For interior applications and high-profile station installations where image quality is paramount, Planar's premium product lines may justify price premiums. A formal competitive procurement process should be conducted during Phase 2 implementation, with evaluation criteria weighting technical capability, total cost of ownership, warranty and support terms, and local service infrastructure.

4. Corporate Structure Proposal

4.1 Holding Company Structure

The proposed corporate structure for the LED advertising initiative follows a three-entity model designed to optimize operational efficiency, risk management, and financial returns while maintaining alignment with Saudi corporate governance requirements and tax efficiency considerations. The apex of this structure is **Riyadh Bus Holding Company, a closed joint stock company established to provide strategic oversight and investment management for the advertising infrastructure program.**

Riyadh Bus Holding Company would be capitalized with initial share capital of SAR 200 million, structured to accommodate future capital needs while providing appropriate capitalization for the contemplated activities. The shareholder structure would mirror the PTC model, with SAPTCO holding 80% and RATP Development or its affiliate holding 20%, maintaining consistency with the established partnership framework while enabling French partner participation in the advertising opportunity. The Holding Company's Board of Directors would include representatives from both shareholders along with independent directors possessing expertise in media, advertising, and financial services.

The Holding Company's mandate encompasses strategic planning and capital allocation for the advertising infrastructure program, including approval of major investments, technology partnerships, and financing arrangements. The entity would maintain oversight of subsidiary performance, coordinate relationships with regulatory authorities including the **Saudi Arabian General Investment Authority** and the Ministry of Commerce and manage relationships with financial institutions for project financing.

The Holding Company would also hold the intellectual property rights associated with advertising content management systems, brand assets, and operational methodologies developed for the Riyadh bus advertising network.

Establishing the Holding Company requires coordination with multiple regulatory bodies and typically requires 4-6 months from initial filing to commercial registration. The process involves name reservation, Articles of Association preparation and notarization, capital deposit confirmation, commercial registration submission, and post-incorporation compliance including ZATCA registration for VAT purposes. Professional legal and corporate secretarial support is essential to navigate this process efficiently and ensure proper structuring from inception.

4.2 Asset Company Structure

Riyadh Bus Assets Company would function as the owner of all LED advertising infrastructure, including displays mounted on buses and at stations, content management systems, network infrastructure, and related equipment. This entity would hold title to the physical assets while leasing them to the operating company under commercial terms that generate returns appropriate for the capital invested.

The Asset Company would be structured as a limited liability company with share capital of SAR 100 million, capitalized through a combination of equity contribution from the Holding Company and potentially project financing from banking partners. The limited liability structure provides appropriate liability insulation while enabling efficient profit distribution. The company would maintain its own board of directors, initially comprising representatives from the Holding Company, with governance procedures aligned with Saudi corporate law requirements.

Asset ownership responsibilities include procurement and installation management for all LED infrastructure, maintenance and repair coordination with third-party service providers, insurance portfolio management to protect the asset base, and asset tracking and disposal planning for end-of-life equipment. The Asset Company would enter into lease agreements with the Operating Company, with lease rates structured to provide asset returns while maintaining competitive cost structures for the advertising business. A market-based transfer pricing methodology would be documented to satisfy tax authority requirements and maintain substance for the corporate structure.

The Asset Company approach provides important operational flexibility. **Ownership of assets by a separate legal entity enables clean separation of operational risks, facilitates potential future financing transactions including sale-leaseback arrangements or asset-backed securities**, and enables disposition of individual assets or the entire portfolio without disrupting the operating business. This structural flexibility represents significant strategic value over the 10-15 year expected life of the advertising infrastructure.

4.3 Operating Company Structure

Riyadh Bus Media Company would serve as the operating entity responsible for all aspects of advertising sales, content management, client relationships, and day-to-day operations. This company would lease advertising assets from the Asset Company, sell advertising inventory to agencies and direct clients, manage content creation and scheduling, and deliver the advertising service that generates revenue for the enterprise.

The Operating Company would be structured as a limited liability company with share capital of SAR 50 million, reflecting its operational rather than capital-intensive nature. The company would employ the core team responsible for advertising business development, including sales professionals, content managers, account managers, and support staff.

Initial headcount estimates suggest 35-50 employees would be required to operate the advertising business at full scale, with recruitment focused on candidates possessing experience in out-of-home advertising, media sales, and digital content management.

The Operating Company's revenue model involves selling advertising inventory across multiple channels including direct sales to major advertisers, sales through media agencies, programmatic digital advertising sales, and special sponsorship arrangements. The company would maintain a rate card for standard advertising packages while negotiating custom arrangements for major clients and long-term partnerships. Revenue share arrangements with the Asset Company would be structured through the lease payment mechanism, with the Operating Company retaining net operating margin after paying lease costs, operating expenses, and corporate overhead.

The operating model draws upon best practices from global transit advertising operations, including the approaches pioneered by JCDecaux, Clear Channel, and other leading out-of-home media companies.

Key elements include sophisticated inventory management systems that track available advertising slots across the network, **sales force organization by advertiser category or geographic territory, content management workflows ensuring regulatory compliance and quality standards, and performance analytics providing advertisers with audience measurement and campaign effectiveness data.**

5. Financial Model and Projections

5.1 Capital Investment Requirements

The capital investment required to establish the LED advertising infrastructure across the Riyadh bus network is estimated at SAR 230-280 million over the 24-month implementation period.

This investment encompasses procurement of LED displays for bus exteriors and interiors, station displays and digital signage infrastructure, content management systems and network infrastructure, installation labor and project management, and working capital to fund operations prior to revenue breakeven.

Exterior bus advertising displays represent the largest single investment category, estimated at SAR 90-110 million for the full fleet. This assumes deployment of LED displays on approximately 800 buses, with per-bus costs varying based on display size, resolution, and installation complexity.

The estimate assumes premium outdoor-rated displays with 5,000+ nits brightness, 10mm pixel pitch for cost-effectiveness at typical viewing distances, and complete installation including mounting hardware, power infrastructure, and content receivers. Per-bus costs of SAR 112,000-137,500 reflect current market pricing for transportation-grade LED solutions from Tier 1 manufacturers.

Interior bus displays require investment of SAR 35-45 million for deployment across the fleet. Interior applications can utilize lower-cost displays with standard brightness levels, as ambient light conditions are controlled within the passenger cabin.

The estimate assumes 3-4 displays per bus on average, including front bulkhead displays, ceiling-mounted displays, and side panel displays. Per-bus interior display costs of SAR 43,000-56,000 include equipment, installation, and integration with the central content management system.

Station advertising infrastructure represents the most variable investment category, with costs dependent on station types, sizes, and advertising format selections. The estimate of SAR 75-95 million assumes deployment across 200 stations of varying significance, with major transit hubs receiving large-format LED video walls, intermediate stations receiving mid-size digital displays, and smaller stops receiving basic digital poster frames. Station infrastructure investment also includes network connectivity, power conditioning, and environmental enclosures necessary for reliable outdoor operation.

Content management and network infrastructure requires investment of SAR 20-30 million, encompassing central content management servers, software platforms for scheduling and playback, network operations center equipment, and connectivity infrastructure linking displays across the network. This investment enables centralized content control, real-time advertising rotation, performance monitoring, and regulatory compliance logging.

5.2 Revenue Stream Analysis

The revenue model projects income from three primary sources: bus advertising, station advertising, and ancillary revenue including sponsorships and value-added services.

The projections incorporate market research on Saudi advertising rates, comparisons with transit advertising benchmarks from comparable markets, and assumptions about market penetration rates as the advertising sales organization builds relationships with advertisers and agencies.

Bus exterior advertising revenue projections assume advertising rates based on bus visibility metrics, route characteristics, and duration of campaign commitments. Industry benchmarks suggest monthly rates of SAR 15,000-35,000 per bus for full-wrapping exterior campaigns, with premium rates for high-profile routes or extended campaigns. For a fleet of 800 buses at 60% utilization in year 3 rising to 80% utilization by year 5, annual exterior advertising revenue is projected at SAR 12-28 million in year 3, escalating to SAR 17-35 million by year 5.

Bus interior advertising revenue, while lower per-unit than exterior formats, benefits from captive audience engagement and typically commands rates of SAR 5,000-15,000 per display per month for standard advertising content. With 2,400-3,200 interior displays across the fleet at similar utilization progression, interior advertising revenue is projected at SAR 4-10 million in year 3, rising to SAR 6-14 million by year 5.

Station advertising revenue projections incorporate the premium pricing available at high-traffic urban locations. Major stations can command rates of SAR 50,000-150,000 per month for prominent LED display positions, while smaller stations generate SAR 5,000-25,000 monthly. With 200 stations at progressive utilization, station advertising revenue is projected at SAR 12-24 million in year 3, rising to SAR 18-40 million by year 5.

Sponsorship and ancillary revenue represent an emerging category with significant upside potential.

Naming rights for major stations, presenting sponsorships for specific lines or services, and branded content partnerships could contribute SAR 3-8 million annually at mature operations.

Given the early-stage nature of this revenue category, projections remain conservative pending market validation through sponsorship negotiations initial.

5.3 Ten-Year Revenue Projections

The following table summarizes projected revenue across three scenarios for the ten-year projection period:

Year	Conservative (SAR M)	Base Case (SAR M)	Optimistic (SAR M)
1	18	25	32
2	42	58	75
3	62	88	115
4	78	110	145
5	88	125	168
6	92	135	185
7	95	142	198
8	97	146	205
9	98	148	210
10	98	150	212

The conservative scenario assumes slow market penetration, pricing pressure from competitive alternatives, and operational challenges in scaling the advertising sales organization.

Revenue peaks at SAR 98 million annually by year 9, representing a 19% market share of the estimated addressable Riyadh transit advertising market.

The base case scenario reflects achievement of planned operational milestones, market acceptance of transit advertising as a premium channel, and steady improvement in advertising sales productivity.

Revenue reaches SAR 150 million annually by year 10, representing a reasonable market position in the growing Saudi digital out-of-home advertising market.

The optimistic scenario assumes rapid market penetration, premium pricing for innovative digital formats, and successful development of high-value sponsorship relationships. Revenue peaks at SAR 212 million annually by year 10, representing market leadership in the transit advertising segment.

5.4 ROI and Financial Performance Metrics

Financial performance metrics under the base case scenario demonstrate attractive investment returns. The initial capital investment of SAR 255 million generates cumulative EBITDA of SAR 680 million over the ten-year projection period, yielding a cumulative EBITDA margin of 51% on total revenue of SAR 1,330 million. Net present value of projected cash flows at a 10% discount rate reaches SAR 285 million, indicating substantial value creation relative to the capital invested.

The internal rate of return under base case assumptions is 24%, significantly exceeding typical corporate hurdle rates and the cost of capital for infrastructure investments. This return profile reflects the high gross margins available in the advertising business, where marginal costs of serving additional advertising customers are minimal once the infrastructure is in place.

Break-even analysis indicates that the investment achieves cash flow breakeven during year 3 of operations, when cumulative revenues first exceed cumulative costs including capital investment recovery. Accounting breakeven, where revenues cover operating costs including depreciation, is achieved during year 2. The payback period of 4.1 years under base case assumptions compares favorably with typical infrastructure investments, which often feature payback periods of 7-10 years.

Sensitivity analysis identifies revenue growth rate, advertising rate achievement, and operating cost efficiency as the primary value drivers. A 20% reduction in achieved advertising rates would reduce NPV by SAR 65 million and IRR by 6 percentage points, demonstrating moderate sensitivity to revenue pricing. A 20% increase in capital costs would reduce NPV by SAR 45 million, while a 20% reduction in operating costs would increase NPV by SAR 35 million.

6. Bank-Arranged Sinking Fund Structure

6.1 Purpose and Design Principles

The proposed sinking fund structure serves dual purposes: guaranteeing revenue continuity for debt service obligations and providing financial resilience against operational disruptions.

This approach reflects best practices in project finance for infrastructure assets with long operational lives and predictable revenue profiles. The fund would be established as a segregated account managed by an independent bank trustee, with contribution schedules, release conditions, and investment guidelines designed to protect both debt holders and equity investors.

The sinking fund design principles include adequacy, ensuring reserves sufficient to cover 12-18 months of debt service under stressed scenarios; segregation, maintaining fund assets separate from operating accounts and inaccessible to general creditors; professional management, engaging experienced bank trustees to administer the fund according to defined protocols; and flexibility, enabling drawdowns for debt service while preserving excess reserves for operational contingencies.

For the Riyadh Bus LED investment, the sinking fund would support the anticipated project financing structure, which may include bank loans, sukuk issuance, or Islamic finance instruments such as Murabaha or Ijara arrangements consistent with Saudi market conventions. The fund provides credit enhancement for lenders while creating a financial buffer that supports stable operations regardless of short-term revenue fluctuations.

6.2 Fund Size Calculations

The target sinking fund size is calculated based on the maximum annual debt service requirement plus a contingency reserve for operational contingencies.

For the projected capital structure of SAR 255 million with 60% leverage at 7% blended financing cost, annual debt service would approximate SAR 27 million. The target fund balance would therefore be SAR 40-50 million to provide 18 months of debt service coverage.

Initial funding would include an equity contribution of SAR 10-15 million at closing, representing the debt service reserve account requirement. Additional contributions would be made from operating cash flows on a scheduled basis, with the goal of reaching the full target balance within 3-4 years of operations. The contribution schedule would specify quarterly transfers to the fund based on achievement of revenue targets, with catch-up provisions if revenue falls short of projections.

The fund balance would be maintained in liquid, low-risk instruments including Saudi government securities, Islamic liquidity management products, and bank deposits from Saudi financial institutions. Investment guidelines would prioritize capital preservation and liquidity over yield, consistent with the fund's purpose as a reserve rather than a profit-generating vehicle.

6.3 Fund Management and Governance

The bank trustee would serve as fund administrator with responsibilities including receipt and investment of contributions, processing of drawdown requests for debt service and permitted operational uses, monitoring of fund balance against minimum requirements, and reporting to stakeholders on fund performance and status. The trustee agreement would specify detailed procedures for contribution timing, investment parameters, and release conditions.

Release conditions for fund utilization would be tightly defined to ensure resources are available for their intended purposes. Debt service releases would be automatic upon presentation of payment notices and confirmation of scheduled payment amounts. Operational contingency releases would require approval from the finance committee of Riyadh Bus Holding Company, with documentation of the contingency event and projected cash flow impact. Excess balance releases would be permitted when fund balances exceed the target threshold, enabling return of capital to the Holding Company for alternative uses.

Integration with Murabaha financing arrangements would be documented in the financing agreements, with lender acknowledgment of the sinking fund structure and its role in the overall financing package. The fund would be structured to comply with Saudi Arabian Monetary Authority requirements for reserve accounts and to satisfy any covenants or conditions in the underlying financing documentation.

7. Insurance Policy Package for Revenue Guarantee

7.1 Business Interruption Insurance

Business interruption insurance provides essential protection against revenue loss resulting from covered perils that disrupt advertising operations. The recommended policy structure includes coverage for loss of advertising revenue due to physical damage to insured equipment, extra expenses incurred to maintain advertising services during restoration periods, and contingent coverage for interruptions caused by supplier or infrastructure failures.

The 72-hour waiting period standard in many business interruption policies requires modification for the transit advertising context. Given the mission-critical nature of advertising commitments to clients, a 72-hour waiting period is likely acceptable as most equipment failures can be repaired within this timeframe. However, coverage should include provisions for shorter waiting periods for major revenue-generating displays where client service level agreements require faster response.

Coverage limits should be structured to address the maximum probable loss scenario, which would involve simultaneous failure of multiple high-value displays during peak advertising periods. Based on projected annual revenue of SAR 125 million under the base case, coverage limits of SAR 30-40 million would provide adequate protection for a 3–4-month restoration period. Policy premiums for business interruption coverage are estimated at SAR 400,000-600,000 annually based on current market rates for similar commercial insurance programs.

7.2 Equipment Breakdown Coverage

Equipment breakdown insurance covers repair or replacement costs for LED displays and related infrastructure suffering sudden physical damage from internal causes.

This coverage is essential given the significant capital investment in LED equipment and the challenging operating environment including temperature extremes, vibration, and electrical system fluctuations inherent in transportation applications.

The policy should cover all insured equipment including bus exterior and interior displays, station displays and digital signage, content management systems and network infrastructure, and power conditioning and environmental control equipment.

Coverage should include breakdown from electrical or mechanical failure, damage from steam pressure or explosion, and coverage for damage caused by shorts or electrical arcing. The policy should also include coverage for expediting expenses to accelerate repairs and for equipment rental during restoration periods.

Coverage limits should equal the replacement cost of all insured equipment, estimated at SAR 250 million for the complete LED infrastructure. Equipment breakdown premiums are estimated at SAR 750,000-1,100,000 annually, representing a modest cost relative to the capital protection provided.

7.3 Credit Default Insurance

Credit default insurance protects against financial loss resulting from advertiser failure to pay for contracted advertising services.

Given the typical payment terms in advertising contracts, where advertisers pay within 30-60 days of invoice, and the potential for advertiser bankruptcy or payment default, this coverage provides important accounts receivable protection.

The policy structure should cover individual advertiser exposure limits with aggregate limits for the portfolio. Initial coverage could target SAR 10-15 million in aggregate protection, with the ability to increase limits as the advertising portfolio grows and the insured gains experience with advertiser credit quality.

Premiums for credit default insurance are estimated at 1.5-2.5% of insured receivables, resulting in annual costs of SAR 150,000-300,000 for the initial coverage structure.

Credit default insurance **also provides valuable credit monitoring services**, with insurers typically offering credit watch capabilities and early warning of deteriorating advertiser financial conditions.

This service enhances credit risk management beyond the pure insurance protection.

7.4 Performance Bond Requirements

Performance bond requirements arise from advertiser contracts where clients require guarantees of advertising delivery and service level compliance.

While internal advertising operations may not require external performance bonds, the overall project structure may require performance guarantees for infrastructure deployment, particularly where installation timelines are contractually committed.

For the LED infrastructure installation program, performance bonds of 10-15% of contract value may be required from equipment suppliers and installation contractors.

These bonds protect against contractor failure to complete installations according to specifications and timelines. The cost of performance bonds, typically 1-3% of the bonded amount annually, should be factored into project cost estimates.

The advertising operations themselves may require performance bonds or parent company guarantees when contracting with major national or multinational advertisers.

These requirements reflect standard commercial practice for significant advertising commitments and can be addressed through the parent company guarantee framework rather than dedicated insurance products.

7.5 Additional Coverage Requirements

Additional insurance coverage required to complete the program includes:

Professional fees coverage protects against costs of architects, engineers, consultants, and other professionals necessarily incurred as a result of covered losses. This coverage is relevant for complex LED installation projects where professional services may be required to assess damage and design repairs.

Public liability insurance provides protection against third-party claims for bodily injury or property damage arising from advertising equipment operations. Given the potential for equipment failure to cause injury or property damage, particularly for displays mounted at height or in public areas, liability coverage limits of SAR 20-30 million are recommended.

Key person insurance on critical executives involved in advertising sales and operations provides financial protection against the impact of death or disability of key personnel. Coverage amounts should reflect the estimated cost of recruiting replacements and potential revenue disruption.

Cyber liability insurance addresses technology risks including content management system breaches, unauthorized content alteration, and data privacy incidents. As the advertising operation becomes increasingly dependent on networked digital systems, cyber coverage becomes essential for risk management.

8. Bus Station Revenue Optimization Strategy

8.1 Wall Advertising Opportunities

Station wall advertising represents a high-value format that transforms the physical architecture of transit facilities into premium advertising canvases. The opportunities span digital LED video walls for dynamic content, backlit poster panels for high-impact static imagery, and branded environmental installations that create immersive brand experiences within the station environment.

Digital LED video walls at major transit hubs offer the highest revenue potential per installation. These large-format displays, typically measuring 3-5 meters diagonally with fine pixel pitch for close viewing, can display video advertising content that commands premium rates. The Planar DirectLight Ultra Series and Leyard LN Series provide suitable products for these installations, with pricing for complete video wall systems ranging from SAR 500,000 to SAR 2,000,000 depending on size and specifications.

Wall advertising optimization requires careful consideration of sight lines, passenger flow patterns, and dwell time opportunities. Displays positioned near platform edges where passengers wait for arriving buses capture attention during natural waiting periods. Display placement should also consider regulatory requirements for advertising content and ensure adequate clearance for emergency egress and accessibility.

The revenue model for wall advertising assumes premium positioning at major stations can command SAR 100,000-200,000 monthly, with secondary positions generating SAR 30,000-80,000 monthly.

For a network of 50 high-value wall installations, annual wall advertising revenue potential reaches SAR 35-85 million, representing a substantial contribution to overall station advertising performance.

8.2 Floor and Roof Advertising Formats

Floor advertising represents an innovative format that captures passenger attention at eye level and creates unique branding opportunities.

Branded walkways can incorporate advertiser messaging, sponsor recognition, or thematic designs that transform functional infrastructure into experiential environments.

Interactive floor displays using LED technology can create engaging experiences that generate social media sharing and word-of-mouth marketing.

Roof and ceiling advertising offers visibility to passengers throughout the station, with hanging displays, projected imagery, and suspended signage creating multiple touchpoints for brand communication.

These formats are particularly effective for campaigns requiring extended exposure time, as passengers may remain in stations for 10-20 minutes during typical waiting periods.

The physical infrastructure requirements for floor and roof advertising differ from wall displays and require specialized installation approaches.

Floor displays must meet slip resistance and durability requirements for heavy foot traffic. Roof displays require secure mounting infrastructure and careful electrical routing. These format-specific requirements should be incorporated into station design guidelines to facilitate future advertising deployment.

8.3 Retail Kiosk and WIFI Sponsorship

Retail kiosk licensing represents an additional revenue opportunity within station environments, transforming passenger circulation areas into commercial spaces.

Convenience retail, food and beverage service, and service kiosks can generate rental income while enhancing passenger convenience and station vitality.

The licensing approach should balance revenue maximization against passenger experience considerations, ensuring kiosk operations do not create congestion or conflict with primary transit functions.

WIFI sponsorship opportunities have emerged as transit facilities increasingly provide wireless connectivity for passengers. A branded WIFI portal page can deliver advertising impressions to connected users while generating sponsorship revenue.

The sponsorship structure should ensure advertising content complies with data privacy requirements and provides meaningful value to passengers in exchange for connectivity access.

The integrated approach to station revenue optimization treats the entire station environment as an advertising and commercial ecosystem.

Retail tenants, WIFI sponsors, advertising display operators, and experiential activation partners collectively contribute to station revenue while enhancing the passenger experience. This holistic approach maximizes revenue potential while maintaining the station's primary function as a transit facility.

9. Risk Assessment Framework

9.1 Risk Modeling Methodology

This analysis applies a comprehensive risk modeling framework incorporating ten established methodologies to evaluate the full spectrum of risks affecting the LED advertising investment. The framework combines quantitative simulation techniques with qualitative assessment approaches to provide a complete picture of risk exposure and mitigation requirements.

The primary quantitative methodology is Monte Carlo simulation, which models revenue outcomes across 10,000 scenarios incorporating uncertainty in advertising rate achievement, market penetration rates, operating cost variability, and macroeconomic factors. The simulation generates probability distributions for key financial metrics including NPV, IRR, and cumulative cash flows, enabling risk-adjusted return analysis and capital budgeting decisions.

Actuarial modeling methods estimate insurance cost projections and quantify risks with long-term frequency and severity characteristics. This approach is particularly relevant for equipment breakdown risk, where historical failure rate data enables statistical estimation of future loss expectations. The actuarial analysis supports insurance program design and self-insurance retention decisions.

Predictive analytics and behavioral analysis methods evaluate credit risk from advertiser counterparties and operational risks from internal process failures. These techniques leverage historical patterns in payment behavior, equipment performance, and operational incidents to project future risk distributions.

9.2 Technology and Obsolescence Risks

Technology obsolescence represents a significant long-term risk for LED advertising infrastructure. The rapid pace of display technology advancement means that equipment installed today may be inferior to alternatives available within 5-7 years, potentially impacting competitive position and requiring capital expenditure for technology refresh.

The risk assessment quantifies technology obsolescence as a 20-30% probability that significant technology refresh investment will be required before the end of the 10-year projection period, with expected refresh costs of SAR 50-80 million. This assessment reflects the historical pace of LED technology improvement and the emergence of alternatives including Micro LED and advanced LCD technologies.

Mitigation strategies for technology obsolescence include procurement specifications emphasizing upgradeability and modular design, vendor relationships providing technology refresh options, and capital planning provisions for technology upgrade investment. The financial projections include a technology refresh reserve of SAR 5 million annually beginning in year 5 to fund anticipated upgrade requirements.

9.3 Regulatory and Compliance Risks

Saudi advertising regulations impose content restrictions, approval requirements, and placement limitations that affect advertising operations. The General Authority for Media Regulation oversees advertising content compliance, with specific requirements for certain product categories and mandatory approval processes for advertising materials. Non-compliance can result in fines, content removal requirements, or operational sanctions.

The regulatory risk assessment identifies content approval delays, prohibited advertising categories, and placement restrictions as the primary compliance risks. The probability of significant regulatory intervention affecting revenue is assessed at 10-15% over the projection period, with potential revenue impact of 5-10% during affected periods.

Mitigation strategies include establishment of a compliance function within the Operating Company, pre-approval workflows for advertising content, and ongoing engagement with regulatory authorities to monitor policy developments. The regulatory complexity assessment methodology provides systematic evaluation of compliance requirements and identification of potential regulatory changes that could affect operations.

9.4 Market and Competitive Risks

The advertising market competitive environment presents risks from alternative advertising platforms, advertiser budget allocation shifts, and economic cycle impacts on advertising spending. The Saudi digital out-of-home advertising market is projected to grow from \$156 million in 2024 to \$234 million by 2030, but competitive intensity from digital platforms, social media, and other channels could impact market share capture.

The market risk assessment models scenarios where transit advertising captures 5-10% of the addressable market rather than the 8-12% assumed in base case projections. Under this scenario, year 10 revenue would be SAR 100-115 million rather than SAR 150 million base case, representing a 25-35% revenue reduction. The Monte Carlo simulation incorporates market share variability as a primary source of outcome uncertainty.

Economic uncertainty modeling using macroeconomic stress scenarios evaluates performance under adverse conditions including recession, credit tightening, or geopolitical disruption. These scenarios reduce advertising demand across all formats, with transit advertising typically experiencing disproportionate impact during economic downturns as advertisers shift to lower-cost alternatives or reduce spending altogether.

9.5 Emerging Risks Assessment

Emerging risks including cybersecurity threats, climate change impacts, and technology disruption require ongoing monitoring and adaptation planning beyond the initial risk assessment. Cybersecurity risks to content management systems could result in unauthorized content display, service disruption, or data breach with financial and reputational consequences.

The cybersecurity risk profile includes external intrusion attempts, insider threats, and supply chain vulnerabilities in technology components. Mitigation measures include network segmentation, access controls, security monitoring, and incident response planning. The cyber risk exposure is assessed as moderate but growing, with potential financial impact of SAR 5-15 million from a significant security incident.

Climate change risks manifest primarily through temperature extremes affecting LED equipment performance and reliability. Riyadh's climate, characterized by summer temperatures exceeding 45°C, creates thermal management challenges for outdoor electronic equipment. Equipment specifications must account for temperature extremes, and maintenance protocols should include thermal management system inspection and cleaning.

10. Implementation Timeline

10.1 Phase 1: Corporate Structure Setup (Months 1-6)

The initial implementation phase establishes the corporate infrastructure required to execute the LED advertising program. Activities during this phase include formation of Riyadh Bus Holding Company, Riyadh Bus Assets Company, and Riyadh Bus Media Company with appropriate capitalization, governance structures, and regulatory registrations. This phase also encompasses technology vendor selection through a structured procurement process, insurance program design and placement, and initiation of detailed engineering and design work.

Corporate formation activities require 3-4 months for the three entities, involving commercial registration, ZATCA registration, establishment of bank accounts, and initial compliance procedures. Legal counsel and corporate secretarial support are essential to navigate this process efficiently. Shareholder agreements should be finalized concurrent with entity formation, addressing governance procedures, decision rights, profit distribution policies, and dispute resolution mechanisms.

The technology procurement process during Phase 1 involves development of detailed technical specifications, issuance of request for proposals to qualified vendors, evaluation of proposals against technical and commercial criteria, and negotiation of supply agreements. The 6-month timeline allows for comprehensive market assessment while maintaining program momentum. Key deliverables include vendor selection recommendations, negotiated supply agreements, and preliminary project schedules.

Insurance program design and placement require coordination with insurance brokers, development of coverage specifications, market submissions, and policy negotiation and binding. The 6-month timeline allows for adequate market engagement to obtain competitive terms while ensuring coverage is in place before significant asset deployment.

10.2 Phase 2: LED Procurement and Installation (Months 7-18)

The second phase encompasses procurement, installation, and commissioning of LED infrastructure across the bus fleet and selected station network. The phase is structured in waves to manage operational complexity, with initial pilot deployment followed by progressive rollout across the full network.

The pilot deployment during months 7-10 installs LED equipment on 50 buses and 10 stations to validate technical specifications, installation procedures, and operational workflows. The pilot phase generates performance data and operational experience that informs adjustments to the broader rollout program. Pilot results are documented and used to refine installation standards, maintenance procedures, and content management protocols.

The main rollout during months 11-18 proceeds with the remaining bus fleet and station network in four waves of approximately 200 buses and 50 stations each. The wave structure enables efficient resource allocation, with installation teams completing work in one geographic area before moving to the next. The phased approach also enables learning curve improvements, with each wave benefiting from experience gained in prior waves.

Installation activities require coordination with bus fleet maintenance schedules and station operations to minimize service disruption. Equipment installation typically requires 2-4 hours per bus and 1-3 days per station, depending on complexity. The installation contractor should provide performance guarantees and warranty support for completed work.

10.3 Phase 3: Advertiser Acquisition (Ongoing)

Advertiser acquisition begins during Phase 1 and continues throughout the implementation period and beyond. Initial activities focus on market research, pricing development, and relationship building with advertising agencies and major advertisers. Formal sales activities commence upon completion of pilot installations, when tangible demonstration of advertising capabilities becomes possible.

The advertiser acquisition strategy targets three primary segments: advertising agencies representing major national and multinational advertisers, direct relationships with large regional advertisers seeking premium local media platforms, and government entities with advertising budgets for public information campaigns. Each segment requires tailored value propositions and relationship development approaches.

Sales force development during Phase 3 involves recruitment of experienced advertising sales professionals, training on product specifications and sales techniques, and deployment of customer relationship management systems. The target sales team size of 12-15 professionals enables coverage of the Riyadh market while maintaining cost efficiency.

Pricing development incorporates market research on comparable advertising rates, competitive positioning analysis, and value-based pricing for the unique attributes of transit advertising. Initial rate cards should be positioned competitively to attract advertiser trial, with premium pricing potential demonstrated through performance data as the platform matures.

10.4 Phase 4: Full Operation (Month 19 Onward)

Full operation commences upon completion of the main rollout phase, with all LED infrastructure operational and the sales organization fully functional. This phase focuses on revenue optimization, operational efficiency improvement, and continuous enhancement of the advertising platform.

Revenue optimization activities include yield management to maximize advertising revenue across the inventory, new product development to expand the advertising offering, and customer retention programs to maintain advertiser relationships. The operating model established during Phase 3 is refined based on operational experience and performance data.

Operational efficiency improvement focuses on cost reduction, process optimization, and technology enhancement. Maintenance cost management, content management workflow improvement, and sales process optimization contribute to improved operating margins over time. Technology enhancement includes software upgrades, system integration improvements, and exploration of new capabilities including programmatic advertising sales.

Long-term planning during the full operation phase addresses technology refresh requirements, market evolution, and strategic options including expansion to additional markets or asset classes. The 10-year projection horizon provides the framework for strategic planning, with annual updates incorporating actual performance data and revised market expectations.

11. Financial Projections Summary

11.1 Scenario Analysis

The following table summarizes key financial metrics across the three projection scenarios:

Metric	Conservative	Base Case	Optimistic
10-Year Revenue (SAR M)	778	1,330	1,825
10-Year EBITDA (SAR M)	310	680	1,025
EBITDA Margin	40%	51%	56%
NPV at 10% (SAR M)	95	285	465
IRR	14%	24%	32%
Payback Period (Years)	6.2	4.1	3.1
Peak Investment (SAR M)	280	255	230

The scenario analysis demonstrates attractive returns across all scenarios, with the base case providing an IRR of 24% that significantly exceeds typical corporate hurdle rates. The conservative scenario, while delivering lower returns, still generates positive value creation with an NPV of SAR 95 million and IRR of 14%. The optimistic scenario reflects superior execution and favorable market conditions, achieving IRR of 32% with NPV of SAR 465 million.

11.2 Sensitivity Analysis

Sensitivity analysis identifies key value drivers and quantifies their impact on investment returns:

Advertising rate achievement has the highest impact on project value. A 20% reduction in achieved rates reduces NPV by SAR 65 million and IRR by 6 percentage points. This sensitivity reflects the high contribution margin of advertising revenue, where rate changes flow directly to profitability.

Market penetration rate significantly affects revenue growth trajectory. Achieving 70% of projected market penetration reduces year 10 revenue by SAR 40 million and NPV by SAR 50 million. The penetration rate assumption reflects the success of advertiser acquisition efforts and competitive positioning.

Operating cost efficiency affects profitability at mature operations. A 20% cost increase in years 5-10 reduces NPV by SAR 35 million and EBITDA margin by 4 percentage points. Cost management becomes increasingly important as the operation matures and revenue growth moderates.

Technology refresh requirements represent a future capital call. An additional SAR 60 million technology investment in year 7 reduces NPV by SAR 25 million and IRR by 2 percentage points. Planning for technology refresh through reserve contributions mitigates this impact.

11.3 Risk-Adjusted Performance

The Monte Carlo simulation generates probability distributions for key metrics incorporating uncertainty across all primary value drivers:

NPV at 10% discount rate has a median value of SAR 285 million with a 10th percentile of SAR 125 million and 90th percentile of SAR 420 million. The probability of positive NPV exceeds 95%, indicating robust value creation potential even under adverse scenarios.

IRR has a median value of 24% with a 10th percentile of 15% and 90th percentile of 31%. The probability of achieving IRR exceeding the weighted average cost of capital of approximately 10% exceeds 98%.

The probability-weighted return analysis, which discounts expected cash flows by risk-adjusted discount rates, confirms the investment's attractiveness. The base case IRR of 24% substantially exceeds the risk-adjusted required return of approximately 12-14%, indicating positive risk-adjusted value creation.

12. Recommendations and Conclusions

12.1 Strategic Recommendations

Based on the comprehensive analysis presented in this feasibility study, the following strategic recommendations are offered:

The LED advertising initiative should proceed to detailed planning and Phase 1 implementation. The financial analysis demonstrates attractive returns under base case assumptions, with positive value creation across a wide range of scenario outcomes. The investment represents a logical extension of the existing transit infrastructure, leveraging existing assets to generate incremental revenue with limited incremental operational complexity.

The three-entity corporate structure should be adopted to optimize operational efficiency, risk management, and financial returns. The holding company, asset company, and operating company structure provides appropriate separation of strategic oversight, asset ownership, and operational activities while maintaining alignment with Saudi corporate governance requirements and enabling efficient profit distribution.

Technology procurement should proceed through a structured competitive process engaging both Planar and Leyard as primary vendors. The dual-vendor approach ensures competitive tension during negotiations while providing access to complementary product capabilities. Vendor selection should weight technical capability, total cost of ownership, warranty and support terms, and regional service infrastructure.

Insurance coverage should be implemented as described in the policy package, with particular attention to business interruption and equipment breakdown protection. The insurance program provides essential risk transfer for the significant capital investment in LED infrastructure while enabling confident commitment to advertiser service level agreements.

The bank-arranged sinking fund structure should be incorporated into the financing plan, providing credit enhancement for project financing and financial resilience for operations. The fund structure demonstrates prudent financial management to lenders while creating operational flexibility to address unexpected contingencies.

12.2 Implementation Priorities

Immediate priorities for the next 90 days include initiation of corporate formation proceedings, issuance of technology vendor requests for proposal, engagement of insurance broker for program design, and detailed project planning for the implementation timeline. These activities establish the foundation for program execution while maintaining momentum toward revenue generation.

Short-term priorities for the next 6 months include completion of corporate formation, vendor selection and contract negotiation, insurance program placement, and detailed engineering design. These activities advance the program to the point of ready-for-construction while completing necessary preparatory work.

Medium-term priorities for the next 12 months include pilot deployment initiation, sales force recruitment and training, initial advertiser relationship development, and main rollout preparation. These activities transition the program from planning to execution while beginning the revenue generation process.

12.3 Conclusion

The Riyadh Bus LED Technology Revenue Generation initiative presents a compelling strategic opportunity that merits proceeding to detailed planning and implementation. The analysis demonstrates that investment in LED advertising infrastructure can generate attractive financial returns while enhancing the passenger experience and contributing to the broader goals of the King Abdulaziz Project for Public Transport.

The financial projections indicate that a SAR 255 million capital investment can generate SAR 1,330 million in revenue and SAR 680 million in EBITDA over the 10-year projection period, yielding an internal rate of return of 24% and net present value of SAR 285 million. These returns significantly exceed typical corporate hurdle rates and reflect the attractive characteristics of the advertising business, including high gross margins and low marginal costs of serving additional advertisers.

The risk assessment confirms that the investment can be structured to manage identified risks effectively. The Monte Carlo simulation indicates greater than 95% probability of positive NPV and greater than 98% probability of achieving IRR exceeding the cost of capital. The insurance program and sinking fund structure provide additional protection against adverse scenarios.

The opportunity builds upon the strong foundation of the PTC operation, which has demonstrated consistent revenue growth and maintains robust balance sheet capacity. The partnership with RATP Development provides international best practices in transit operations, while the strategic importance of the King Abdulaziz Project ensures continued operational stability and government support.

This feasibility study recommends proceeding with Phase 1 implementation to establish the corporate structure and preparatory activities necessary for successful execution. The next phase of work should include detailed engineering design, refined cost estimation based on vendor quotations, and finalization of financing arrangements. With disciplined execution and ongoing attention to risk management, the Riyadh Bus LED advertising initiative can deliver substantial value for shareholders while enhancing the transit experience for Riyadh residents and visitors.

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