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A Study on the Role of Strategic Management in the Success of Bus Rapid Transit Systems (BRTS): Evidence from Indian and Global Cases

Abstract: This paper examines Bus Rapid Transit Systems (BRTS) through the lens of strategic management and public sector innovation. Using international exemplars (Curitiba, TransMilenio) and a focused case study of Ahmedabad's Janmarg, the study explores how strategic planning, institutional arrangements, stakeholder engagement, financing models, and performance measurement have enabled—or constrained—BRTS as an innovative public-sector response to urban mobility challenges. The paper argues that BRTS represents a distinct mode of public sector innovation: it combines technological, organizational, financial and policy innovations to produce scalable mobility solutions. Drawing on secondary data, institutional reports and literature on public strategic management, the paper identifies best-practice elements for successful BRTS implementation and offers recommendations for scaling, institutional resilience, and strategic governance in Indian cities. Key limitations and areas for future research are discussed.

Keywords: Bus Rapid Transit System, Strategic Management, Public Sector Innovation, Janmarg, Ahmedabad, TransMilenio, Curitiba, urban transport policy

Introduction : Urbanization in the Global South has intensified demand for cost-effective, high-capacity public transport. Bus Rapid Transit Systems (BRTS) emerged as a pragmatic alternative to rail—providing many benefits of rapid transit (speed, reliability, capacity) while keeping capital costs relatively low. Beyond infrastructure and

vehicles, BRTS requires institutional reconfiguration, innovative financing, operational contracting, land-use coordination, and sustained policy leadership. Thus, BRTS should be studied not merely as transport engineering but as an arena of public sector innovation and strategic management.

This paper explores BRTS as a public-sector innovation: how strategic choices by municipal agencies, political leadership, and partner institutions shape system design, implementation, and long-term performance. The primary objective is to analyze strategic management practices that enable successful BRTS outcomes and to draw lessons from prominent cases—Curitiba (Brazil), TransMilenio (Bogotá) and Ahmedabad's Janmarg (India). The secondary objective is to offer practical recommendations for policymakers and transport managers seeking to replicate or scale BRT in Indian cities.

Theoretical Framework: Strategic Management & Public Sector Innovation: Strategic management in the public sector involves linking planning to budgeting, performance measurement, and implementation while adapting to political and organizational constraints. In recent decades, public strategic management has emphasized goal clarity, stakeholder engagement, performance metrics, and adaptive learning as key mechanisms for public value creation (Bryson et al., literature on public strategic management).

Public sector innovation (PSI) refers to new or significantly improved policies, processes, organizational forms, or services introduced by public entities that create public value. PSI is multi-dimensional—encompassing technological, social, organizational, and policy innovations—and is often driven by pressing public problems, political leadership, and cross-sector collaboration. Studies highlight that PSI success depends on institutional capacity, risk tolerance, and mechanisms for scaling and diffusion.

Combining these perspectives, BRTS can be conceptualized as a complex PSI: it requires technological choices (dedicated lanes, boarding platforms), organizational reforms (special purpose agencies, contracting), financial innovation (annuity/availability payments, commercial revenues), and regulatory change (right-of-way enforcement, traffic priority). The strategic management lens clarifies how choices across planning, finance, operations, and stakeholder relations determine whether BRTS becomes a resilient urban mobility solution.

Review of Literature:

Table 1: Review of Literature

Author(s) & Year	Study Title / Source	Objective / Focus	Key Findings	Relevance to Present Study
Lerner, J. (Curitiba Model)	Curitiba Urban Transport Case Studies	To present the integrated land-use and transport planning that created the first BRT system.	Demonstrated that coordinated land-use and bus-based rapid transit can deliver high-capacity mobility at low cost.	Provides the earliest model of BRT as public-sector innovation; highlights integration as a strategic management element.
Hidalgo & Gutiérrez (2010)	*BRT in Bogotá, TransMilenio Case Study*	To examine the design, implementation and performance of TransMilenio.	Found major travel time savings, increased ridership, but also governance and overcrowding challenges.	Offers insights on rapid implementation and the importance of continuous capacity planning and institutional oversight.
ITDP (2018)	From TransMilenio	To analyze policy	Strong political will and	Underlines need for

Author(s) & Year	Study Title / Source	Objective / Focus	Key Findings	Relevance to Present Study
	to Cycle Networks: Lessons from Bogotá	leadership and multimodal integration in Bogotá.	rapid execution created legitimacy; lack of future-proof planning led to congestion issues later.	strategic long-term planning and stakeholder engagement for BRT success.
World Bank (2015)	*International Experience in BRT Implementation*	To provide global best practices and implementation challenges.	Stresses clear institutional roles, sustainable funding models, and performance-based contracting.	Forms theoretical basis for strategic management framework applied to BRT.
Bryson et al. (2018)	The State of Public Strategic Management Research	To review public strategic management literature.	Strategic management improves alignment of vision, performance measurement, and adaptability in public sector projects.	Provides conceptual framework for analyzing BRT as a strategic management case.
Van Acker (2014)	*Public Sector Innovation: Definitions, Typologies*	To conceptualize innovation in public sector services.	Defines PSI as technological, organizational, and policy innovations that create public value.	BRTS can be seen as multi-dimensional PSI; helps in framing analytical approach.
CEPT University & UNESCAP (2010)	*Janmarg: Ahmedabad BRTS Case Study*	To document design, implementation, and institutional mechanisms of Ahmedabad BRTS.	Janmarg succeeded due to corridor design, dedicated SPV, and donor support; challenges include fare policy and last-mile connectivity.	Serves as primary Indian case study and example of institutional innovation.
Kaushik et al. (2021)	A Study from Ahmedabad Janmarg BRTS	To analyze operational performance and commuter feedback.	Found improvements in mobility and reduction in congestion, but highlighted issues in affordability and accessibility.	Reinforces need for adaptive management and financial sustainability in Indian BRTS.
Litman (2020)	Evaluating Public Transport Benefits and Costs	To provide methodology for assessing transport project impacts.	Suggests frameworks for cost-benefit, environmental, and social evaluation.	Supports methodology section by linking BRT performance to broader economic and social outcomes.
Suzuki et al. (2013)	*Transforming Cities with Transit* (World Bank)	To analyze transit-oriented development (TOD) with BRT/Metro systems.	TOD and BRT integration improve land values, accessibility, and financial viability.	Offers recommendations for revenue generation and corridor-based development for long-term sustainability.

Research Methodology: This paper undertakes a qualitative, comparative case-study approach grounded in secondary-source analysis. It synthesizes academic papers, institutional reports, and authoritative case studies (Curitiba, Bogotá, Ahmedabad) to identify patterns in strategic management practices and draw policy lessons. The literature and reports were selected for

institutional credibility (World Bank, ITDP, CEPT, peer-reviewed journals) and relevance to governance, finance, and institutional design. The analysis focuses on: (a) strategic intent and political leadership, (b) institutional arrangements and contracts, (c) financing and revenue models, (d) operational practices and monitoring, and (e) adaptability and scaling.

Objectives of the Study:

(1) To analyze the strategic management practices adopted in the planning, implementation, and operation of Bus Rapid Transit Systems (BRTS).

(2) To evaluate the role of BRTS as a public sector innovation in enhancing urban mobility, improving service quality, and contributing to sustainable urban development.

Case Analyses & Strategic Insights

1. Curitiba: Integrated Land-Use and Transit Strategy: Curitiba's innovation was integrative: simultaneous land-use policy, arterial road network redesign, and a hierarchical bus system. Strategic management elements included strong mayoral leadership, cross-departmental coordination, and an overriding vision linking transport with environmental and social goals. While Curitiba set a global example, later analyses indicate the need for sustained reinvestment and institutional renewal to maintain ridership and service quality. This shows that early success must be supported by long-term strategic resource allocation.
2. TransMilenio: Rapid Implementation & Scale: Bogotá's TransMilenio benefited from decisive political leadership and an implementation-oriented strategy—rapid deployment generated immediate benefits and public legitimacy. Key strategic choices included trunk-and-feeder network separation, off-board fare collection for speed, and incorporation of private operators under performance specifications. However, TransMilenio also illustrates governance risks: overcrowding, insufficient capacity expansion, and complex stakeholder demands exposed weaknesses in long-term planning and regulatory oversight. The lesson: fast implementation should be accompanied by medium- and long-term capacity planning and robust institutional frameworks.
3. Ahmedabad Janmarg: Institutional Design, Local Context & Performance: Ahmedabad's Janmarg is frequently cited for appropriate design choices for Indian conditions: dedicated corridors in dense urban sections, platform-level boarding, and emphasis on accessibility. CEPT and other studies note Janmarg's strengths in planning and its award-winning early performance. Janmarg's strategic success derived from: (a) effective technical design adapted to local context, (b) the creation of a project-specific management entity to coordinate implementation, and (c) donor/agency support and capacity building. However, literature also flags issues: fare structure and short-trip affordability, last-mile connectivity, and long-term financial sustainability require strategic attention. Recent municipal decisions and infrastructure changes in Ahmedabad underline the importance of institutional resilience and the political dimensions of corridor persistence.

Strategic Management in BRTS: Strategic management in the context of Bus Rapid Transit Systems (BRTS) refers to the process of planning, organizing, implementing, and monitoring strategies to achieve efficient, sustainable, and customer-oriented urban transport services.

It involves aligning long-term vision (sustainable mobility, reduced congestion, better accessibility) with day-to-day operational decisions, while ensuring optimal use of resources, stakeholder collaboration, and continuous performance improvement.

Simply put: Strategic Management in BRTS = Vision + Planning + Implementation + Control → to deliver better public transport and public value.

Table 2: Key Components of Strategic Management in BRTS

Component	Explanation	Application in BRTS
1. Strategic Vision & Mission	Defines the long-term purpose and direction of BRTS.	*Example:* Ahmedabad Janmarg's vision of providing fast, reliable, and eco-friendly mass transit for all citizens.
2. Environmental Analysis	Assessing external and internal factors (SWOT / PESTEL).	Understanding city population growth, traffic congestion, funding availability, and political environment before planning corridors.
3. Strategy Formulation	Designing plans and policies to achieve goals.	Corridor selection, bus fleet procurement, fare policy, and institutional framework (SPV creation).
4. Strategy Implementation	Executing the formulated strategy effectively.	Building dedicated lanes, installing ITS (Intelligent Transport System), training drivers and staff, launching awareness campaigns.
5. Financial & Resource Management	Mobilizing funds and ensuring cost-effective operations.	PPP models for bus operations, revenue generation through advertisements, rationalizing operational costs.
6. Stakeholder Engagement	Involving government agencies, private operators, commuters, and civil society.	Public consultations, operator contracts, grievance redressal mechanisms.
7. Performance Monitoring & Control	Measuring progress and making adjustments as required.	KPI tracking: ridership growth, travel time reduction, service reliability, user satisfaction surveys.
8. Continuous Innovation & Improvement	Adapting to changing urban needs and upgrading services.	Integrating e-buses, digital ticketing, last-mile connectivity, multimodal integration (Metro + BRT).

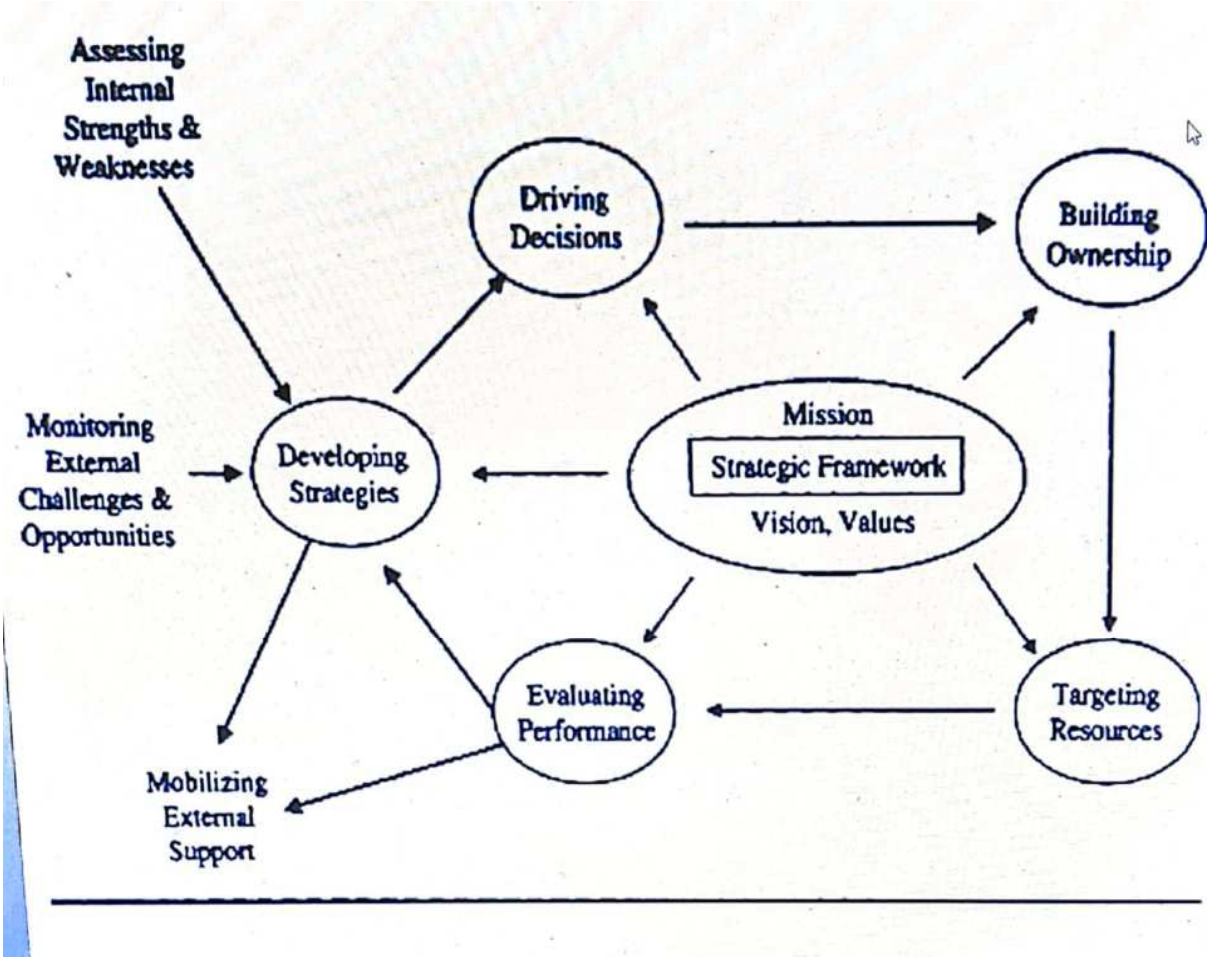
Strategic Management Lessons: From the cases and literature, several strategic-management lessons emerge:

1. Vision + Political Leadership: Durable BRTS requires an initial, well-communicated vision and political champions who can align stakeholders and push through necessary regulatory changes. Rapid implementation can cement political support, but longevity requires sustained leadership across electoral cycles.
2. Institutional Arrangements: Creating or empowering a transit-focused entity (special purpose vehicle, corporation, or authority) helps coordinate planning, procurement, and operations. Clear separation of regulatory and operational roles reduces conflicts and supports performance contracting. World Bank guidance underscores institutional clarity as central to project success.
3. Finance & Revenue Innovation: BRTS must diversify revenue (fares, advertising, land value capture, commercial leases) and design fare policies sensitive to short-trip riders. Innovative contracting (availability payments, performance-based incentives) can align private operators' incentives with public goals. Janmarg and other Indian experiences point to the need for long-term financial modelling and contingency planning.
4. Operational Excellence & Monitoring: Off-board fare collection, qualified enforcement of dedicated lanes, and robust operations monitoring (KPIs for travel time, reliability, crowding)

are essential. Data-driven adaptive management (route adjustments, frequency changes) sustains service quality over time.

5. Integration & Inclusivity: Integrating BRT with land-use, feeder services, non-motorized transport, and accessibility measures is central to maximizing social benefits. Systems that ignore last-mile connections risk underperforming relative to their potential. TransMilenio and Curitiba underline both successes and the social governance responsibilities of large BRT systems.
6. Adaptive Capacity & Long-Term Maintenance: BRTS must be managed as an evolving public service: periodic reinvestment, fleet renewal, institutional learning, and mechanisms to resolve corridor conflicts with other infrastructure projects are needed to prevent fragmentation or rollback. Recent reports on Ahmedabad illustrate how urban changes (new flyovers, metro construction) can create coordination challenges, stressing the need for strategic integration across urban agencies.

Figure 1: Model for Strategic Management in the Public Sector (Adapted from Poister & Van Slyke, 2002)



The model depicted in Figure 1 highlights a dynamic framework for strategic management in public sector innovation. For successful implementation of BRTS strategies, it is crucial to designate specific champions for each strategic goal. This aligns with Winch's (1998) principle that "innovations need champions," ensuring accountability and focus throughout the process.

As demonstrated in the experiences of state DOTs in the U.S., assigning owners (senior executives) to oversee strategic objectives and leaders (high-level managers) to execute the strategies helps streamline decision-making, secure resources, and maintain alignment with the mission, vision, and values of the transport system. This dual-role approach creates ownership and commitment, both essential for driving strategic initiatives like BRTS, improving resource allocation, and enabling continuous performance evaluation for better service delivery.

Policy Recommendations:

Based on the strategic insights, policymakers and urban managers should consider the following:

1. Create/Strengthen a Dedicated Transit Authority: Empower a professional, accountable agency with clear mandates for planning, procurement, contracting and performance monitoring of BRT corridors.
2. Adopt Mixed Revenue Models: Combine farebox with commercial revenues (station retail, advertising) and explore land-value capture in corridor redevelopment to improve long-term financial sustainability.
3. Performance-Based Contracts: Use contracts that tie operator payments to KPIs (punctuality, vehicle condition, customer satisfaction), with transparent monitoring and penalties/incentives.
4. Plan for Integration: Design BRT corridors together with feeder services, pedestrian improvements, and NMT (non-motorized transport) facilities to optimize access and equity.
5. Institutionalize Data & Learning: Mandate continuous data collection (automated passenger counts, AVL/GPS, farebox data) and create periodic review processes to adapt service levels and design interventions.
6. Political Safeguards & Stakeholder Engagement: Build cross-party consensus by demonstrating measurable benefits (time savings, pollution reduction) and by involving civil society and user groups to reduce vulnerability to political reversal.
7. Long-term Corridor Protection: Use regulatory and planning tools to protect BRT corridors from incompatible future infrastructure projects; require inter-agency impact assessments when new projects (metro pillars, flyovers) intersect corridors.

Conclusion: BRTS is more than a transport technology; it is a suite of public-sector innovations that combine technical design with institutional and financial reform. Strategic management—characterized by clear vision, institutional clarity, adaptive operations, financing innovation, and stakeholder engagement—determines whether BRTS fulfills its promise. International exemplars (Curitiba, Bogotá) and Indian cases (Ahmedabad) collectively show that while technical standards are necessary, governance, funding mechanisms, and adaptability are the decisive factors for sustainable BRT outcomes. Policymakers aiming to scale BRT must therefore prioritize strategic management reforms alongside engineering excellence.

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