Case Study: Dakar's Smart City Initiatives

Executive Summary

Dakar, Senegal represents an ambitious and multifaceted approach to smart city development in West Africa, anchored by the New Deal Technologique Horizon 2034 strategy launched in February 2025. With approximately $4.6 billion in planned investments across transport, digital infrastructure, and urban development, the city demonstrates significant commitment to digital transformation. The flagship projects include Africa's first fully electric Bus Rapid Transit system, the Regional Express Train connecting the city center to the new airport, and the Diamniadio satellite city with its Tier 3 national datacenter.

The initiatives showcase notable strengths in sustainable transport innovation, with 144 electric buses powered by solar energy and integrated ticketing across multiple modes. Senegal's data sovereignty approach, mandating server localization through Law No. 2008-12, stands out as a progressive governance framework aligned with African Union principles. The government's emphasis on digital inclusion through subsidized fares and accessibility features demonstrates attention to equity concerns.

However, significant challenges persist. The heavy reliance on foreign technology vendors, particularly Huawei for surveillance infrastructure and European companies for transport systems, raises questions about technological dependency and long-term sustainability. The deployment of nearly 500 CCTV cameras with limited oversight mechanisms and the development of biometric digital ID systems without published privacy impact assessments present surveillance concerns. Implementation gaps are evident, with the previous Digital Senegal 2025 strategy achieving only 20% of planned projects.

The digital divide remains substantial, with 1GB of data costing 7.12% of average monthly income and a 54% usage gap despite infrastructure availability. While the New Deal Technologique sets ambitious targets for job creation and GDP contribution, most economic benefits remain projections rather than documented outcomes. The concentration of smart city infrastructure in new developments like Diamniadio risks creating a two-tier urban system that bypasses existing informal settlements where the majority of urban residents live.

1. Ownership

Dakar's smart city ownership structure reflects a hybrid model combining public infrastructure control with significant private sector and foreign participation. The national government maintains primary ownership through agencies including Société Senegal Numerique SA for digital coordination, APIX for major infrastructure supervision, and the Ministry of Communication, Telecommunications, and Digital Affairs for sector oversight. At the municipal level, CETUD coordinates urban transport initiatives, though with limited autonomous decision-making power relative to national authorities.

The transport sector exemplifies the Public-Private Partnership approach, with Dakar Mobilité operating the BRT system through a 15-year concession. This consortium comprises French infrastructure investor Meridiam and Senegal's sovereign wealth fund FONSIS in a 70/30 shareholding structure. While this arrangement brought $144 million in private investment, it also means operational control resides with foreign entities despite public infrastructure ownership remaining with the government.

Foreign ownership presence is substantial and multifaceted. Huawei provides technical support for the Safe City surveillance program and broader digital infrastructure. European vendors dominate transport technology, with Thales delivering signaling and ticketing systems, Alstom and CAF supplying train rolling stock, and Engie Ineo implementing rail management systems. Chinese surveillance technology vendor Hikvision provides airport security systems. This dependence on foreign technology raises concerns about intellectual property ownership, maintenance capabilities, and the ability of national technical staff to independently operate and modify critical systems.

Data ownership represents a progressive exception to foreign dependency. Senegal Law No. 2008-12 mandates data localization, requiring servers to remain within national borders. President Macky Sall's directive that all state data be hosted in the Diamniadio Datacenter and migrated from foreign servers demonstrates commitment to data sovereignty. This approach aligns with African Union Data Policy Framework principles and provides a foundation for indigenous control over citizen information, though implementation mechanisms and enforcement remain unclear.

The ownership structure's sustainability depends on building local technical capacity. The Digital Technology Park opening in March 2026 aims to develop domestic expertise through training centers, startup incubators, and research collaboration with universities. However, current evidence suggests African technology companies participate only as subcontractors rather than primary implementers, limiting genuine technology transfer and perpetuating dependency on foreign vendors for core systems operation.

2. Finance

Dakar's smart city financing demonstrates strong engagement with multilateral development institutions, with approximately $4.6 billion in total planned investments across all initiatives. The World Bank emerges as the primary international financier, contributing $322 million through multiple channels: $150 million for the Digital Economy Acceleration Project, $50 million for healthcare digitization, $100 million for urban mobility integration, and $22 million through its Multilateral Investment Guarantee Agency for BRT risk mitigation. This substantial commitment reflects development bank confidence in Senegal's governance frameworks and project viability.

The African Development Bank provides significant financing for both transport and digital infrastructure, funding the TER's initial phase and committing $120 million for the Diamniadio digital park. Islamic Development Bank contributions total €40.25 million for TER Phase 2, while French development cooperation through AFD and the French Treasury supports both transport infrastructure and fiber optic networks. The European Investment Bank additionally finances BRT construction. This diversified international funding base reduces dependency on single financiers while requiring coordination across multiple accountability frameworks.

National budget allocations demonstrate domestic commitment, with the 2026 Finance Bill allocating XOF 472 billion (approximately $837 million) specifically for transport infrastructure. The Ministry of Land and Air Transport receives XOF 115.4 billion for road and rail modernization. The New Deal Technologique represents over €1.5 billion in planned investments across 12 flagship programs covering digitization, telemedicine, artificial intelligence, and satellite technology. These substantial domestic contributions signal political prioritization of smart city development beyond rhetoric.

Private sector participation remains limited, representing an estimated 1-25% of total funding. The $144 million Dakar Mobilité investment in BRT infrastructure constitutes the main private contribution, though even this involves the state-owned FONSIS holding a 30% stake. The broader reliance on public and development bank financing raises sustainability questions about ongoing operational costs and system maintenance once initial construction phases complete. Limited private sector engagement may reflect risk perceptions or insufficient return-on-investment expectations.

Revenue generation models vary significantly across systems. The BRT operates on user fees supplemented by government subsidy, with the state committing $17 million over 15 years to offset revenue losses from 50% fare reductions for low-income riders. E-government services charge fees ranging from 1,000 to 5,000 CFA francs ($1.70-$8.30) per transaction, though collection efficiency and cost recovery rates remain undocumented. Most smart city systems require ongoing public subsidy rather than achieving financial self-sustainability, creating long-term fiscal commitments for resource-constrained government budgets.

3. Technology

Dakar's technology landscape reveals heavy dependence on foreign vendors with limited local participation in core system implementation. Huawei dominates digital infrastructure and surveillance, providing technical support for the Smart Sénégal Safe City program with nearly 500 intelligent cameras connected to four command centers. European vendors control transport technology, with Thales implementing the TRANSCITY ticketing platform and European Train Control Systems level two signaling, Alstom supplying 15 Coradia Polyvalent trainsets for TER Phase 1, and Spanish manufacturer CAF providing bimodal trains for Phase 2. This technology origin pattern reflects broader African trends of Chinese dominance in surveillance and European leadership in transport systems.

The Diamniadio National Datacenter represents critical digital infrastructure sovereignty. As Senegal's first Tier 3 datacenter inaugurated in June 2021, it connects to 6,000 kilometers of state optical fiber and a submarine cable with 100 Gb/s capacity expandable to 2 Tb/s. The facility hosts both government and private sector data, employing 16 direct staff and generating 720 indirect jobs. This infrastructure provides the physical foundation for data localization requirements, though the extent to which foreign cloud service providers have been successfully excluded remains unclear.

Transport technology showcases environmental innovation leadership. The 18.3-kilometer fully electric BRT system launched in 2024 operates 144 articulated e-buses with 560 kWh battery capacity and 120 kW charging power, requiring approximately six hours for full charge. Solar-generated renewable energy powers the system, making it Africa's first fully electric BRT. The 55-kilometer TER reaches maximum speeds of 160 km/h with dual-mode diesel/electric capability,

carrying up to 113,000 passengers daily. Real-time passenger information, CCTV cameras, and Wi-Fi connectivity demonstrate integration of multiple smart technologies.

Technology transfer provisions exist but remain largely aspirational. The Digital Technology Park scheduled to open in March 2026 includes a training center for upskilling the workforce, with the New Deal Technologique targeting graduation of 100,000 IT specialists and local certification of 90% of digital experts by 2034. However, current implementation shows African technology companies participating only as subcontractors. The lack of open standards for the Huawei Safe City platform and proprietary nature of many systems creates vendor lock-in risks despite government interoperability platform development efforts.

The fragmented technology architecture presents integration challenges. Rather than a unified smart city platform, Dakar deploys multiple separate systems: Huawei Safe City for surveillance, Thales TRANSCITY for transport ticketing, the Senegal Services portal for e-government, and various sector-specific applications. While an interoperability framework is under development as part of the Digital Economy Acceleration Project, current siloed systems limit data sharing and holistic city management capabilities that characterize more mature smart city implementations globally.

4. Governance

Dakar's governance framework demonstrates strong strategic planning through the New Deal Technologique Horizon 2034, launched by President Bassirou Diomaye Faye in February 2025. This ten-year strategy articulates four clear pillars: digital sovereignty with sensitive data hosted within national borders; digitalization of 95% of administrative procedures; growing the digital economy through startups and AI deployment; and achieving continental leadership as one of Africa's top three digital services exporters by 2034. Anchored in the longer-term Vision Sénégal 2050 and aligned with the AU Digital Transformation Strategy 2020-2030, this framework provides policy coherence across government levels.

Data governance represents a progressive policy arena. Senegal Law No. 2008-12 requiring data localization predates many African countries' data sovereignty initiatives, demonstrating early recognition of digital independence importance. The 2018 Telecommunications Code replacing the 2011 framework modernizes regulatory provisions. The Conseil National du Numérique established in 2018 provides high-level advisory oversight, though its actual influence on implementation decisions remains unclear. These policies align with AU Data Policy Framework principles regarding data protection, sovereignty, and cross-border data flows.

Multi-stakeholder participation exists in policy formulation but with limited citizen voice. Government agencies lead decision-making through inter-ministerial coordination. Private sector engagement occurs primarily through PPP structures like Dakar Mobilité for BRT operations. International organizations including the World Bank, AfDB, IsDB, AFD, GIZ, UNDP, and ITDP provide technical and financial support. Academic institutions collaborate through the Digital Technology Park. However, civil society participation in governance structures remains minimal, with no evidence of robust citizen advisory boards or participatory budgeting mechanisms in smart city planning.

Accountability mechanisms show institutional presence but limited transparency. The Operational Coordination and Monitoring Office (BOCS) supervises Digital Technology Park progress, while the

General Delegation for the Promotion of the Urban Pole (DGPU) oversees Diamniadio development with stated rigorous project selection. BRT concession agreements enable government oversight of service quality. However, procurement transparency is medium at best, with major contracts publicly announced but detailed tender processes and evaluation criteria not routinely accessible. This limited transparency creates opportunities for corruption and reduces public accountability.

Implementation capacity presents the governance framework's weakest dimension. The previous Digital Senegal 2025 strategy achieved only 20% of planned projects and reforms, undermined by weak governance, poor interoperability, and coordination challenges. Only 5% of government procedures were partially digitized before recent acceleration efforts. The E-Territoire programme launched in July 2023 aims to improve local governance digitalization, but systematic evaluation of its effectiveness is absent. The gap between ambitious strategic targets and actual implementation capacity raises questions about whether the New Deal Technologique will avoid its predecessor's failures.

5. Surveillance

Dakar's surveillance infrastructure has expanded substantially under the Smart Sénégal Safe City program, deploying nearly 500 intelligent cameras connected to four command and visualization centers across Dakar, Saly, Saint-Louis, and Kaolack. Huawei provides technical support for this system, which enables defense and security forces monitoring. Additional CCTV cameras operate in TER stations, BRT vehicles and stations, and at Blaise Diagne International Airport using Hikvision technology. This network represents moderate deployment by global standards but significant surveillance capacity expansion for Senegal.

The stated purposes for surveillance emphasize public safety, crime prevention, and security monitoring. Safe City program documentation frames cameras as tools for protecting citizens and managing traffic. Transport system CCTV is justified through security and operational management needs. However, the lack of published crime statistics demonstrating surveillance effectiveness, combined with broader African patterns where Safe City programs often enable political surveillance rather than genuine safety improvements, raises questions about actual versus stated objectives.

Advanced surveillance technologies beyond basic CCTV appear operational but are poorly documented. The characterization of cameras as "intelligent" suggests facial recognition, license plate recognition, and AI analytics capabilities typical of Huawei Safe City platforms deployed elsewhere in Africa. Senegal's development of biometric digital ID systems, with government delegations visiting Togo in November 2025 to study MOSIP-based implementations, indicates plans for integrated biometric surveillance. Civil society reports note concerns about transparency, exclusion risks, and data governance related to these systems, highlighting that they collect personal data beyond strict necessity.

Oversight mechanisms are critically weak. No independent surveillance oversight body has been identified. Command centers operate under defense and security forces control, with CCTV data storage regulated by police internal procedures rather than external accountability frameworks. Data retention policies are not publicly specified, access rights lack clear warrant requirements, and privacy impact assessments have not been published. This absence of civilian oversight contradicts

AU Data Policy Framework principles requiring robust data protection mechanisms and independent oversight institutions.

The surveillance architecture risks enabling authoritarian practices. With cameras controlled by security forces, no independent monitoring, and integration with biometric identification systems under development, Dakar's surveillance infrastructure mirrors patterns in other African cities where Safe City programs have been documented enabling political repression. Senegal's relatively strong democratic institutions provide some protection, but the technical capabilities for mass surveillance exist without corresponding legal safeguards. The inherited colonial legacy of top-down, security-focused ID systems with minimal civil society input compounds these risks, potentially entrenching inequality and enabling exclusion of marginalized communities who cannot navigate biometric enrollment or face system errors.

6. Performance

Dakar's transport systems demonstrate measurable performance achievements. The BRT reduces travel time from 95 minutes to 45 minutes, representing a 53% improvement that significantly impacts daily commuters' quality of life. Expected capacity of 300,000 passengers per day addresses substantial mobility needs in a rapidly growing city. The TER transports up to 113,000 passengers daily, connecting the city center to Diamniadio and the airport in 45 minutes compared to much longer journeys via congested road networks. These quantified efficiency gains provide concrete evidence of smart city technology delivering tangible improvements.

Digital infrastructure performance shows impressive connectivity expansion. Internet penetration grew from 10% in 2011 to 58% in 2021 and 60.6% in 2025, with 11.3 million individuals now online. Mobile broadband subscriptions total 15.88 million, indicating widespread mobile internet access. The Senegal Services portal offers over 750 digital administrative procedures compared to only 5% partial digitization before recent reforms. These metrics demonstrate substantial progress in digital infrastructure deployment and e-government service availability.

Recognition from international bodies validates performance achievements. Dakar won the 2025 Sustainable Transport Award for its integrated mobility approach, described as a "living proof-of-concept for how integrated, tech-driven urban transit can work in a lower-middle income context." Senegal ranks 8th out of 50 African countries in digital industry development and 11th in internet performance. These external assessments suggest that Dakar's initiatives compare favorably against regional peers and meet international standards for sustainable urban development.

However, implementation gaps severely undermine proclaimed progress. The previous Digital Senegal 2025 strategy delivered fewer than 20% of planned projects and reforms, hampered by weak governance, poor interoperability, redundant costs, and persistent cybersecurity threats. Only modest progress occurred toward digitalizing identified priority services. E-government uptake faces delays in establishing oversight committees, coordination difficulties, financial constraints, and IT resource shortages. These systemic implementation weaknesses suggest institutional capacity limitations that ambitious targets cannot overcome.

Usage metrics reveal significant adoption barriers despite infrastructure availability. A 54% usage gap persists, meaning that over half the population lacks internet access despite physical infrastructure

presence. Data affordability remains prohibitive, with 1GB costing 7.12% of average monthly income compared to the Broadband Commission's affordability target of 2%. Digital literacy, device access, and relevant content limitations compound infrastructure gaps. Diamniadio development shows 15 ministries relocated and strong investor interest, but systematic evaluation of service improvements experienced by ordinary citizens is absent, leaving uncertainty about whether smart city infrastructure translates into better lived experiences for the majority.

7. Social Benefit

Dakar's transport initiatives incorporate notable equity provisions. The BRT system charges 50% reduced fares for lower-income and marginalized groups, estimated at 17% of potential riders. The government subsidizes $17 million over 15 years to offset this revenue loss, ensuring financial viability while maintaining social accessibility. Quality inclusive design along BRT stations provides level boarding platforms, at-grade pedestrian crossings, walkways, and cycle tracks ensuring accessibility for women, children, and persons with disabilities. Adequate street lighting improves public safety, particularly benefiting vulnerable groups who previously avoided poorly lit transit areas.

Healthcare digitization promises improved access to underserved populations. The $50 million World Bank investment supports electronic health records, telemedicine services, and digital diagnostics, potentially reaching remote areas where physical healthcare infrastructure is sparse. Enhanced data management enables disease surveillance and evidence-based policy making. Smart education components deploy smart classrooms in middle and high schools, install university recording studios, and establish training centers at the Digital Technology Park. These investments in human capital development could reduce educational inequalities if implemented equitably.

The New Deal Technologique explicitly targets regional digital divides, aiming for 2.6 million new mobile internet users by 2030 and raising adoption to 61% of population. Stated objectives include enabling citizens in underserved regions like Casamance, Kaffrine, Kédougou, and Louga to access digital opportunities. The Diomaye Plan for Casamance allocates XOF 5 billion for border area modernization, potentially addressing historical marginalization. Housing development in Diamniadio plans 45,000 homes for 350,000 people, potentially alleviating Dakar's housing crisis where real estate prices have become unattainable even for middle-class residents.

However, persistent digital divides undermine inclusion claims. Despite infrastructure availability, 27% of older people in African urban areas lack internet access. Data costs at 7.12% of monthly income remain prohibitively expensive for low-income households, creating a usage gap that infrastructure alone cannot bridge. Digital literacy deficits, language barriers with primarily French-language interfaces, and lack of locally relevant content limit meaningful engagement. E-government services requiring digital access risk excluding populations already marginalized from traditional service delivery.

The concentration of smart city investments in new developments like Diamniadio risks creating spatial inequality. With infrastructure focused on formal, planned areas, informal settlements housing the urban majority receive minimal smart city benefits. The BRT serves specific corridors, leaving other areas dependent on informal transport. Biometric digital ID systems under

development raise exclusion concerns, particularly for elderly citizens, marginalized communities, and those without documentation. Civil society warnings about these systems potentially entrenching inequality rather than reducing it deserve serious consideration, as top-down deployment without adequate civil society input has historically disadvantaged vulnerable populations in Senegal's colonial legacy systems.

8. Environmental Benefit

Dakar's fully electric BRT system represents African leadership in zero-emission urban transport. The 144 electric buses powered entirely by solar-generated renewable energy eliminate direct greenhouse gas emissions from public transit operations. This achievement demonstrates that electric mobility is technically feasible in African cities despite charging infrastructure and electricity grid challenges. BRT modeling shows that shift-avoid-improve transport policies offer the greatest potential for keeping global warming below 1.5 degrees, positioning Dakar's approach as a replicable model for climate-responsive urban development across the continent.

Renewable energy integration extends beyond transport. The 15 MW solar power plant planned for Diamniadio provides clean electricity for the new city development. Climate-responsive building designs incorporate natural ventilation reducing air conditioning needs and associated energy consumption. Green corridors integrated into urban planning enhance biodiversity while providing recreational spaces. Water management systems and ecosystem conservation form part of Diamniadio's sustainability framework. These measures demonstrate commitment to environmental sustainability as a core smart city principle rather than an afterthought.

Modal shift potential offers long-term emissions reduction benefits. By providing high-quality, affordable public transport, the BRT and TER systems create viable alternatives to private vehicle use. Travel time reductions make public transit competitive with car travel, potentially shifting mode choice among middle-class commuters who would otherwise drive. Mixed-use neighborhood development and active mobility infrastructure including walkways and cycle tracks further promote low-carbon transport choices. If sustained, these modal shifts could significantly reduce transport sector emissions as Dakar continues rapid urbanization.

Climate resilience features in digital infrastructure planning. The Digital Economy Acceleration Project includes components on "Strengthening Climate-Informed Legal, Regulatory and Institutional Environment" with goals to build "newly built or upgraded digital infrastructure that is resilient to climate related shocks." This forward-looking approach recognizes that smart city investments must withstand increasingly severe climate impacts including flooding, heat waves, and sea level rise affecting coastal Dakar.

However, environmental monitoring systems remain underdeveloped. While air quality sensors are mentioned in Diamniadio planning, specific deployment scale and data accessibility are not documented. Water quality monitoring, climate and weather station networks, and comprehensive environmental management systems appear absent or at pilot stage only. Without robust environmental data collection, the city cannot systematically measure pollution levels, track improvement trends, or inform evidence-based environmental policy. Green space development is

referenced but systematic environmental impact assessments and biodiversity monitoring are not publicly available, limiting ability to verify sustainability claims.

9. Economic Benefit

Economic projections for Dakar's smart city initiatives are ambitious but largely unverified. The New Deal Technologique targets 150,000 direct and 200,000 indirect jobs in the digital sector by 2034, with 5,000 new positions created annually. A GSMA report projects 280,000 jobs by 2030 through digital reforms. Diamniadio anticipates 35,000 direct and 105,000 indirect jobs by 2025. These substantial employment claims position smart cities as engines of job creation in an economy where youth unemployment remains high and formal sector opportunities are scarce.

GDP contribution targets demonstrate high economic expectations. The digital sector currently comprises 6.3% of GDP, with NDT targeting 15% by 2034. GSMA projects FCFA 1,100 billion in economic value generation by 2030, with FCFA 417 billion in increased national revenue through greater digital participation. The goal of becoming one of Africa's top three digital services exporters by 2034 envisions Senegal as a regional technology hub competing with established centers like Kenya and South Africa. These targets reflect confidence in digital transformation as a development pathway.

The startup ecosystem receives substantial policy attention. The Digital Technology Park's startup incubator provides workspace, mentorship, and funding access, with NDT targeting over 500 recognized tech startups by 2034. The audiovisual production center aims to position Senegal as a regional hub for creative industries including cinema, animation, video games, and post-production. This diversification beyond traditional sectors could generate high-value employment and attract foreign investment in knowledge economy activities.

Public sector efficiency gains include cost savings from relocating ministries from rented facilities to owned Diamniadio buildings. While specific amounts are not disclosed, the principle of converting rental expenses to building ownership payments creates long-term asset accumulation. Streamlined digital administrative processes potentially reduce bureaucratic costs and corruption opportunities. The World Bank's "Senegal Digital for Inclusive Growth" report documents links between technology use and higher sales and better jobs, suggesting productivity benefits beyond direct smart city employment.

However, most economic benefits remain projections rather than documented outcomes. The previous Digital Senegal 2025 strategy created far fewer jobs than targeted, with only 20% implementation suggesting large gaps between plans and reality. Construction jobs for BRT and TER infrastructure are temporary rather than sustained employment. The Diamniadio industrial park operates with minimal activity beyond C&H Garment Manufactury, a Chinese company manufacturing for export, suggesting limited domestic economic integration. Promised Chinese investment of $105 million for the second industrial phase has not materialized. Without rigorous cost-benefit analysis, return on investment calculations, or independent economic impact assessments, claims about economic benefits remain speculative, risking disappointment if performance does not match rhetoric.

10. Systems

Dakar's smart city systems architecture reflects fragmented development rather than integrated design. The Senegal Services portal provides digital access to over 750 administrative procedures, operating as the primary e-government platform. Users can obtain civil status certificates, criminal records, tax IDs, construction permits, and various other documents for fees ranging from 1,000 to 5,000 CFA francs. A mobile app extends access beyond desktop computers, while 45 physical one-stop shops in departments nationwide assist citizens lacking digital access. This hybrid digital-physical approach recognizes infrastructure and literacy limitations while advancing digitalization.

Transport systems demonstrate higher integration levels. The BRT and TER operate with unified ticketing enabling a single card to access both systems plus boat transportation, with QR code payment options providing additional flexibility. Real-time passenger information displays, GPS tracking, and fleet management systems create intelligent transport operations. The European Train Control System level two provides advanced signaling, while GSM-R enables driver-signaller communication. Traffic management systems incorporating adaptive signals and monitoring capabilities coordinate with public transit, though deployment scale remains unclear.

The Smart Sénégal program comprises five main components designed for national digital transformation: submarine cable infrastructure to strengthen broadband connectivity; Konectel providing WiFi in major public places; Safe City deploying nearly 500 surveillance cameras across four command centers; Smart Education supporting universities and schools with digital resources; and Senegal Services spaces establishing one-stop administrative shops. This programmatic approach attempts comprehensive digital infrastructure deployment across multiple sectors simultaneously.

Digital health systems under development include electronic medical records, telemedicine platforms, and digital diagnostics supported by the $50 million World Bank healthcare digitization investment. Smart education features university recording studios and smart classrooms in middle and high schools. The Diamniadio National Datacenter provides Tier 3 data hosting connected to 6,000 kilometers of state optical fiber and submarine cable capacity expandable to 2 Tb/s. These sector-specific systems show progress toward comprehensive smart city functionality.

However, interoperability limitations constrain system effectiveness. No unified smart city operating system exists; instead, separate platforms operate independently: Huawei Safe City for surveillance, Thales TRANSCITY for transport ticketing, sector-specific e-government applications, and various utility management systems. While a government interoperability platform is under development to enable data sharing across ministries, current siloed architecture prevents holistic city management. Missing systems are equally notable: no open data portal exists despite transparency benefits; smart parking deploys only at the airport; shared mobility platforms like bike-sharing and e-scooters are absent; waste management remains conventional without IoT-enabled collection; environmental monitoring is limited; and digital twin technology for urban planning is not implemented. This incomplete systems landscape reveals gaps between smart city rhetoric and comprehensive deployment reality.

Conclusions

Dakar's smart city initiatives present a complex picture of ambition and achievement tempered by implementation challenges and structural vulnerabilities. The approximately $4.6 billion investment across transport, digital infrastructure, and new city development demonstrates serious political commitment to technological transformation. Flagship achievements including Africa's first fully electric BRT, the integrated Regional Express Train, and the Tier 3 national datacenter provide tangible infrastructure serving millions of residents. The New Deal Technologique Horizon 2034 articulates a coherent strategic vision aligned with African Union digital transformation principles.

Governance frameworks show progressive elements, particularly data sovereignty provisions predating most African countries' localization requirements. The emphasis on digital inclusion through subsidized transport fares, accessible infrastructure design, and targeted connectivity expansion to underserved regions reflects awareness of equity imperatives. Environmental leadership through zero-emission electric public transport powered by renewable energy positions Dakar as a model for climate-responsive urban development. Strong engagement with multilateral development institutions and diversified international financing reduces dependency on single funding sources.

However, fundamental weaknesses undermine transformative potential. Heavy reliance on foreign technology vendors, particularly Huawei for surveillance and European companies for transport, perpetuates technological dependency despite data sovereignty rhetoric. Surveillance infrastructure expansion with nearly 500 cameras and biometric ID system development occurs without adequate oversight mechanisms, privacy safeguards, or published impact assessments. The 20% implementation rate of the previous digital strategy raises serious questions about institutional capacity to execute ambitious plans, suggesting the New Deal Technologique risks similar underperformance.

The persistent digital divide despite infrastructure investments reveals that deployment alone is insufficient for inclusion. With 1GB data costing over 7% of monthly income and a 54% usage gap, economic barriers exclude the poor from digital benefits. Concentration of smart city infrastructure in formal planned areas like Diamniadio risks creating spatial inequality, leaving informal settlements housing the urban majority marginalized from technological advancement. Most economic benefits remain projections rather than verified outcomes, with limited independent evaluation of actual impacts on citizens' lived experiences.

Alignment with African Union principles is partial and uneven. Data localization supports digital sovereignty objectives, and strategic frameworks reference AU Digital Transformation Strategy alignment. However, weak accountability mechanisms, limited civil society participation in governance, inadequate privacy protections, and technology dependency contradict AU Data Policy Framework requirements for robust oversight, inclusive governance, and indigenous technological capacity building. The Research ICT Africa emphasis on equitable development and Digital Public Infrastructure principles finds rhetorical acknowledgment but insufficient practical implementation, particularly regarding affordability, inclusion of informal economies, and meaningful citizen participation in decision-making processes affecting their data and urban environments.

Methodology

This entire study was researched and written by Perplexity Max in Labs mode. Perplexity AI is an AI-powered answer engine that combines large language models with real-time internet search capabilities to provide sourced, synthesised responses to complex queries. Unlike traditional search engines that return lists of links, Perplexity interprets natural language questions, conducts comprehensive web searches across multiple authoritative sources, and generates concise summaries with inline citations linking to original sources. This transparency in sourcing enables rapid verification of information while maintaining research rigor. For this study, Perplexity was employed to systematically gather, synthesize, and cross-reference academic and official policy documents along with news from national and trade press sources, significantly accelerating the literature review process while ensuring comprehensive coverage of relevant sources.

Perplexity's strength lies in its research capacity, less so in high quality report writing. Because of difficulties retrieving source data from feeder documents the sources for the evidence in the country case studies are contained in a lengthy annex of research notes and references appended to each case study.

The full methodology, outlining the design of the project through incremental iterative interactions with Perplexity, can be found here.

Annex – Research notes and references

1. Ownership

National Government Ownership

- **Société Senegal Numerique SA** (formerly Agence de l'informatique de l'Etat, ADIE) coordinates digitalisation and provides support to public entities in hosting platforms and dematerialising processes.
- **Source**: https://we.hse.ru/en/irs/cas/passsn (E-Government Development in Senegal)
- **Ministry of Communication, Telecommunications, and Digital Affairs** oversees the digital sector, led by Minister Alioune Sall (as of November 2025).
- The **Operational Coordination and Monitoring Office (BOCS)** ensures rigorous supervision of Digital Technology Park project progress.
- **Source**: https://www.wearetech.africa/en/fils-uk/news/tech/senegal-digital-technology-park-to-open-in-march-2026
- **Agency for the Promotion of Investment and Major Works (APIX)** is responsible for supervising implementation of railway and major infrastructure projects.
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/

Municipal Ownership

- **Conseil Exécutif des Transports Urbains de Dakar (CETUD)** has been working to address declining quality of public transport services and regulate informal transport sector.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Private Sector Participation

- **Dakar Mobilité** (private sector partner) constitutes Meridiam and Fonds d'Investissement du Sénégal (FONSIS) with 70/30 shareholding agreement, operating BRT system through 15-year concession.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/
- **Huawei** provided technical support for Smart Sénégal program including Safe City surveillance deployment.

- "The program which benefited from technical support from Huawei includes five components necessary for the digital transformation of the country."
- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Technology Vendors

- **Engie Ineo** and **Thales** received €225m design-build contract from APIX for Dakar TER, delivering European rail traffic management systems.
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/
- **Alstom** awarded contract for supply of 15 Coradia Polyvalent trains.
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/
- **CAF (Construcciones y Auxiliar de Ferrocarriles)** supplied bimodal trainsets for Phase II of TER project.
- **Source**: https://railmarket.com/news/rolling-stock/25035-first-new-caf-trainset-arrives-in-senegal

---

2. Finance

World Bank Funding

- **$150 million** agreement signed April 2023 to finance Digital Economy Acceleration Project (Projet d'accélération de l'économie numérique, PAEN).
- **Source**: https://we.hse.ru/en/irs/cas/passsn
- **$50 million** from World Bank's International Development Association (IDA) to digitize healthcare system.
- **Source**: https://empowerafrica.com/senegal-gets-50-million-from-world-bank-to-digitize-its-healthcare-system/
- **$100 million concessional loan** from World Bank for Dakar urban mobility overhaul (BRT and TER integration).
- **Source**: https://www.linkedin.com/pulse/dakars-urban-mobility-overhaul-technically-transformative-83xkc

- World Bank's Multilateral Investment Guarantee Agency (MIGA) financed **$22 million** for BRT project.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

African Development Bank Funding

- **African Development Bank (AfDB)** funded first phase of Dakar TER project (part of €1 billion total investment).
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/
- AfDB provided funding for Phase II rolling stock acquisition.
- **Source**: https://railmarket.com/news/rolling-stock/25035-first-new-caf-trainset-arrives-in-senegal
- AfDB and Senegalese government planning **$120 million** mega-digital park in Diamniadio.
- **Source**: https://nef.org/fr/senegal-to-get-120m-smart-city-in-diamniadio/

Islamic Development Bank

- **Islamic Development Bank** contributed to first phase of Dakar TER (part of €1 billion investment).
- Financing agreement totaling **EUR 40.25 million** for 2nd phase of Dakar Regional Express Train.
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/; https://www.isdb.org/news/isdb-and-senegal-ink-agreement-for-the-2nd-phase-of-dakar-regional-express-train

French Development Cooperation

- **French Agency for Development** and **French Treasury** funded first phase of Dakar TER.
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/
- French public treasury financed project to provide Diamniadio with high-capacity fiber optical infrastructure.
- **Source**: https://african.business/2023/04/dossier/senegals-new-urban-clusters-to-ease-congestion-and-drive-growth

Private Sector Investment

- **$144 million** private sector investment from Dakar Mobilité consortium for BRT system.

- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/
- World Bank and European Investment Bank financed construction of Dakar BRT infrastructure.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

National Budget Allocations

- **XOF 472 billion (about USD $837 million)** allocated in 2026 Finance Bill for transport infrastructure, including Ministry of Infrastructure external funding.
- **Source**: https://www.ecofinagency.com/news-infrastructures/2910-49950-senegal-allocates-837-million-to-transport-infrastructure-in-2026-finance-bill
- Ministry of Land and Air Transport to receive **XOF 115.4 billion** for developing and modernizing road and rail services.
- **Source**: https://www.ecofinagency.com/news-infrastructures/2910-49950-senegal-allocates-837-million-to-transport-infrastructure-in-2026-finance-bill
- **XOF 66 billion** requested for acquiring two new aircraft for Air Sénégal.
- **Source**: https://www.ecofinagency.com/news-infrastructures/2910-49950-senegal-allocates-837-million-to-transport-infrastructure-in-2026-finance-bill

New Deal Technologique Investment

- "With more than a trillion CFA francs (over €1.5 billion) in planned investments across 12 flagship programmes and 50 projects covering all sectors ranging from digitisation to telemedicine, artificial intelligence, space and satellite technology."
- **Source**: https://www.equaltimes.org/the-challenge-of-developing-the

Infrastructure Project Costs

- **Diamniadio smart city**: Estimated cost of **$2 billion**.
- **Source**: https://www.africanews.com/2018/10/25/senegal-building-new-city-in-bid-to-ease-congestion-in-dakar/; https://www.borgenproject.org/smart-tech-cities-in-africa/
- **Dakar TER project**: Total investment of **€1 billion ($1.14 billion)**.
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/

- **Notto Diobasse Smart City**: Municipal program for planning and development, with Chinese investment of **$105 million** promised for second industrial phase.
- **Source**: https://nottosmartcity.com/en/; https://www.borgenproject.org/smart-tech-cities-in-africa/

Subsidy for Social Equity

- Government will pay **USD $17 million** to BRT concessionaire over 15-year period to offset revenue loss from 50% reduced fares for lower-income riders (estimated 17% of ridership).
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Economic Projections

- GSMA report projects digital reforms could generate **FCFA 1,100 billion** in economic value and create **280,000 new jobs** by 2030.
- **Source**: https://www.gsma.com/newsroom/press-release/new-gsma-report-shows-digital-reforms-could-connect-2-6-million-more-people-in-senegal/
- National revenue could increase by **FCFA 417 billion** through greater digital participation.
- **Source**: https://www.gsma.com/newsroom/press-release/new-gsma-report-shows-digital-reforms-could-connect-2-6-million-more-people-in-senegal/

---

3. Technology

Digital Infrastructure

- **Diamniadio National Datacenter**: First Tier 3 level datacenter in Senegal, inaugurated June 2021 by President Macky Sall.
- "This Datacenter, the foundation of Senegal's digital sovereignty, gave the Head of State the opportunity to magnify and galvanize local expertise."
- Connected to State optical fiber linking national territory over 6,000 km.
- Connected to submarine cable with capacity of more than 100 Gb/s expandable to 2 Tb/s (arrival planned end 2021).
- Includes two spaces of 250 m² for administration and national/international private sector.
- **16 direct jobs** for Datacenter management and **720 indirect jobs**.

- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Digital Technology Park (PTN)

- **12.5 hectares** in first phase, designed as integrated digital city.
- **Opening: March 2026** for local digital private sector.
- Features include:
  - Three ICT Towers for tech companies, startups, investors
  - Research and Innovation Center for collaboration with universities
  - Start-up Incubator with workspace, mentorship, funding access
  - Audiovisual Production Centre for cinema, animation, video games, post-production
  - Training Center for upskilling workforce in digital professions
- Initially launched under "Digital Senegal 2025" program, relaunched under New Technological Deal.
- **Source**: https://www.wearetech.africa/en/fils-uk/news/tech/senegal-digital-technology-park-to-open-in-march-2026; https://datacentresafrica.com/news-details?itemid=7235&post=senegal-resumes-construction-of-digital-technologies-park-662176

Transport Technology - BRT System

- **18.3-kilometer, fully electric BRT** system launched 2024.
- **Fleet of 144 articulated e-buses**.
- **Battery capacity: 560 kWh**, enabling sustained operations.
- **Charging power: 120 kW**, requiring approximately 6 hours for full charge.
- Real-time bus monitoring incorporated to charge based on passenger demand.
- Solar-generated renewable energy powers the system.
- Expected to carry **300,000 passengers per day**.
- Reduces travel journey time from **95 to 45 minutes**.
- **32 feeder bus routes** integrated with TER system.
- Level boarding platforms, at-grade pedestrian crossings, walkways, cycle tracks.
- CCTV cameras installed in stations and vehicles.

- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Transport Technology - Regional Express Train (TER)

- **55km-long track** connecting Dakar city center with Blaise Diagne International Airport.
- **14 stations** and two maintenance sites.
- **Phase 1**: 36km Dakar to Diamniadio (inaugurated December 2021).
- **Phase 2**: 19km extension to airport (operational second half 2025).
- **15 Coradia Polyvalent trainsets** (four-car, dual-mode diesel/electric 25kV).
- **Maximum speed: 160 km/h**.
- **Capacity: 113,000 passengers daily**.
- Travel time Dakar to AIBD: **45 minutes**.
- **European Train Control Systems (ETCS) level two** signalling.
- **GSM-R (Global System for Mobile Communications-Railway)** for driver-signaller communication.
- CCTV cameras, Wi-Fi connectivity for passengers.
- Real-time passenger information systems.
- Comprehensive ticketing system (TRANSCITY mobility solution by Thales).
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/; https://railmarket.com/news/rolling-stock/25035-first-new-caf-trainset-arrives-in-senegal

Smart City Integration

- **Integrated transport card system**: Single card for accessing TER, BRT, and boat transportation.
- QR code payment options also available.
- "With just one card you can seamlessly access the rail system, the BRT buses and even the boat Transportation."
- **Source**: https://www.youtube.com/watch?v=sV35WzZjF-8

Urban Traffic Control

- **Cutting-edge urban traffic-control system** in partnership with Huawei being deployed by municipality of Dakar.
- **Source**: https://energycapitalpower.com/top-5-initiatives-shaping-dakars-urban-mobility/

Connectivity and Internet

- **Internet penetration: 58%** as of 2021 (up from 10% in 2011).
- **15.88 million** mobile broadband subscriptions.
- **11.3 million individuals** using internet at start of 2025, representing **60.6% online penetration rate**.
- **Source**: https://we.hse.ru/en/irs/cas/passsn; https://spaceinafrica.com/2025/12/10/senegal-to-connect-one-million-citizens-via-satellite-rollout-by-2026/

Satellite Connectivity

- Senegal plans to **connect one million citizens via satellite rollout by 2026**.
- **Source**: https://spaceinafrica.com/2025/12/10/senegal-to-connect-one-million-citizens-via-satellite-rollout-by-2026/

Renewable Energy

- **15 MW solar power plant** for Diamniadio.
- Climate-responsive building designs with natural ventilation.
- **Source**: https://7wondersfc.com/participants/diamniadio

Airport Surveillance

- **Blaise Diagne International Airport (AIBD)** uses smart surveillance and car park management from Hikvision.
- **Source**: https://www.sourcesecurity.com/news/senegal-international-airport-chooses-smart-surveillance-co-3425-ga.1646726018.html

---

4. Governance

Data Onshoring Legislation

- **Senegal Law No. 2008-12**: Senegal has enacted Law No. 2008-12 requiring servers to be located within national borders as part of data onshoring strategy.
- This legislation represents an African state strategy for local control over citizen data flows.

- Part of broader efforts by African countries to develop indigenous data governance frameworks in response to competing Chinese, American, and European models that limit African countries' ability to develop their own data sovereignty approaches.

Source: Yusuf, B. (2024). "Sustainable Data Governance Frameworks in Africa." Centre for International Governance Innovation Digital Policy Hub Paper. URL: https://www.cigionline.org/static/documents/DPH-paper-Yusuf.pdf

National Digital Strategy - New Deal Technologique (NDT) Horizon 2034

- **Launched: February 24, 2025** by President Bassirou Diomaye Faye at Abdou Diouf International Conference Center (CICAD) in Diamniadio.
- Ten-year strategy designed to boost technological sovereignty and digital transformation.
- Anchored in long-term **Vision Sénégal 2050**.
- **Source**: https://www.presidence.sn/en/actualites/launch-of-senegals-new-digital-strategy-newdeal-technologique-1/; https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an

Four Pillars of NDT

1. **Digital Sovereignty**: Keeping sensitive data within Senegal, building sovereign cloud and cybersecurity infrastructure, tightening regulations. Sensitive data to be hosted entirely within national borders.
2. **Digitalisation of Public Services**: Creating interoperable e-government platforms, ensuring **95% of administrative procedures** can be handled online through citizen-friendly portals.
3. **Growing the Digital Economy**: Supporting startups and innovation hubs, deploying AI, near-universal connectivity, digital integration across health, education, agriculture, commerce, transport.
4. **Continental Leadership**: Goal to be one of **Africa's top three exporters of digital services by 2034**, strengthening regional partnerships, attracting investment, raising homegrown "e-champions."

- **Source**: https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an

NDT Targets by 2034

- **Over 500** recognized tech startups
- **150,000 direct jobs** in digital sector

- **200,000 indirect jobs**
- **15% contribution to GDP** from digital sector
- **100,000 IT specialists** graduated
- **90% of digital experts** certified locally
- Almost all citizens with quality internet access
- **8 in 10 Senegalese** actively using e-government tools
- **5,000 new digital jobs** created annually
- **Source**: https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an

Previous Digital Strategy

- **Digital Senegal 2025** (Sénégal numérique 2025, DS2025) strategy developed 2016 by Ministry of Digital Economy and Telecommunications.
- Created **35,000 direct** and **162,000 indirect jobs** target by 2025.
- Aimed to boost digital sector contribution to GDP by **10%** (currently 6.3% of GDP).
- Target of **50% Internet penetration** met with 58% achieved.
- Only **20% of SN2025 projects and reforms** fully realised.
- **Source**: https://we.hse.ru/en/irs/cas/passsn; https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an

E-Government Framework

- **Conseil National du Numérique (IT Board)** established 2018 as high-level advisory body.
- New Telecommunications Code adopted 2018, replacing 2011 Code.
- **Senegal Services portal** (Espace Service Senegal) designed as single entry point to all public services.
- **Over 750 procedures** available on portal as of 2023.
- More than **80 digitised procedures** updated at first implementation stages.
- Services include civil status certificate, criminal record, tax ID (NINEA), construction permits, tour guide cards, diploma copies.
- Fees vary from **1,000 to 5,000 CFA francs ($1.70-$8.30)**.
- **Source**: https://we.hse.ru/en/irs/cas/passsn

Local Governance

- **E-Territoire programme** launched July 2023 by Senegalese Local Development Agency (ADL) to improve governance quality, inclusion, and digitalisation of local authorities.
- E-Territory Days held annually.
- **Source**: https://we.hse.ru/en/irs/cas/passsn

Data Governance

- **Senegal Law No. 2008-12**: Requires servers to be located within national borders (data onshoring strategy).
- President Sall instructed government to host all state data in Diamniadio Datacenter and migrate data hosted abroad.
- "From today with the commissioning of this Datacenter, I would no longer like to see other national companies develop their own datacenters."
- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Plan Sénégal Émergent (PSE)

- National development framework promoting e-Government implementation.
- Aligned with AU's Digital Transformation Strategy for Africa 2020-2030.
- **Source**: https://we.hse.ru/en/irs/cas/passsn

Urban Development Governance

- **General Delegation of the Promotion of the Urban Pole (DGPU)** oversees Diamniadio development, makes rigorous selection of projects.
- **15 ministries** already relocated to Diamniadio.
- **Source**: https://african.business/2023/04/dossier/senegals-new-urban-clusters-to-ease-congestion-and-drive-growth

Transport Governance

- BRT formalization involved requiring informal operators to form cooperatives responsible for loan repayments.

- Government regulated services through concession agreements enabling oversight of service quality.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Resilience Strategy

- **Dakar Resilience Strategy** aims to build capacity for 21st century challenges including rapid urbanization.
- Vision: "Dakar by 2025" promoting inclusive and efficient governance through collaborative platforms.
- **Source**: https://resilientcitiesnetwork.org/downloadable_resources/Network/Dakar-Resilience-Strategy-English.pdf

---

5. Surveillance

Smart Sénégal Safe City Program

- **Nearly 500 intelligent cameras** connected to **4 command and visualization centers** across the country (Dakar, Saly, Saint-Louis, Kaolack).
- Allows defense and security forces monitoring.
- Part of Smart Sénégal program with technical support from Huawei.
- **Source**: https://senegalnumeriquesa.sn/en/projets/smart-s%C3%A9n%C3%A9gal; https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Huawei Partnership

- **Huawei provided technical support** for Smart Sénégal program including Safe City surveillance deployment.
- Huawei has showroom and presence in Senegal for consumer electronics.
- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal; https://www.facebook.com/Huaweisn/

Transport Surveillance

- **CCTV cameras installed** in TER stations and railway vehicles.
- **CCTV cameras installed** in BRT stations and e-buses.
- **Source**: https://www.railway-technology.com/projects/dakar-regional-express-train/; https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Airport Surveillance

- **Blaise Diagne International Airport** uses smart surveillance systems from Hikvision.
- **Source**: https://www.sourcesecurity.com/news/senegal-international-airport-chooses-smart-surveillance-co-3425-ga.1646726018.html

Biometric Systems

- Senegal is developing biometric digital ID systems with concerns about transparency, exclusion risks, and data governance.
- Systems collect personal data beyond strict necessity.
- Senegal inherited top-down, security-focused ID systems from French colonial rule with minimal civil society input.
- Digital ID projects risk entrenching inequality and exclusion of marginalized communities.
- International agencies involved in implementation.
- **Source**: https://paradigmhq.org/wp-content/uploads/2025/12/Biometric_Digital_ID_in_Africa.pdf

Data Privacy Concerns

- Government delegation visited Togo November 2025 to learn from Togo's MOSIP-based digital ID experience.
- **Source**: https://www.biometricupdate.com/202511/senegal-taps-inspiration-from-togos-digital-id-experience

---

6. Performance

Transport Performance Metrics

- **BRT expected capacity: 300,000 passengers per day**.
- Travel time reduction: from **95 minutes to 45 minutes**.
- **TER capacity: 113,000 passengers daily**.
- Dakar to airport travel time: **45 minutes**.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/; https://www.railway-technology.com/projects/dakar-regional-express-train/

Digital Senegal 2025 Implementation

- Previous strategy (SN2025) delivered only a fraction of promises with **fewer than 20% of projects and reforms fully realised**.
- Weak governance, poor interoperability, redundant costs, stubborn digital divide, cybersecurity threats hampered progress.
- **Source**: https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an

E-Government Uptake

- Only **5% of procedures** were partially dematerialized before recent acceleration.
- Modest progress towards digitalizing four of ten services identified.
- Implementation challenges include delays in establishing committees, coordination difficulties, financial constraints, IT resource needs.
- **Source**: https://www.opengovpartnership.org/members/senegal/commitments/SN0006/

Internet Access Growth

- Internet penetration grew from **10% in 2011 to 58% in 2021** to **60.6% in 2025**.
- **Source**: https://we.hse.ru/en/irs/cas/passsn; https://spaceinafrica.com/2025/12/10/senegal-to-connect-one-million-citizens-via-satellite-rollout-by-2026/

Diamniadio Development Progress

- "Most of the infrastructure and public facilities are already operational. Investor interest is real and the number of requests for land to develop projects is such that we cannot satisfy all requests."

- **15 ministries** already present in Diamniadio.
- United Nations House scheduled to open.
- **Source**: https://african.business/2023/04/dossier/senegals-new-urban-clusters-to-ease-congestion-and-drive-growth

Award Recognition

- **Dakar won 2025 Sustainable Transport Award**.
- Part of MobiliseYourCity partnership.
- "Offers a living proof-of-concept for how integrated, tech-driven urban transit can work in a lower-middle income context."
- **Source**: https://www.linkedin.com/pulse/dakars-urban-mobility-overhaul-technically-transformative-83xkc

Rankings

- **Senegal ranked 8th out of 50** in digital industry within Africa.
- **11th out of 50** in terms of internet performance (as reported in NDT digital diagnosis).
- **Source**: https://www.equaltimes.org/the-challenge-of-developing-the

---

7. Social Benefit

Transport Equity

- BRT system charges **50% reduced fare** for lower-income and marginalized groups (estimated **17% of potential riders**).
- Government subsidizes **$17 million** over 15 years to offset revenue loss.
- Concession financially viable with concessionaire expected to pay concession fee to government.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Inclusive Design

- **Quality inclusive designs** along BRT stations and pedestrian facilities ensuring accessibility for women, children, persons with disabilities.
- Level boarding platforms, at-grade pedestrian crossings, walkways, cycle tracks.
- Adequate street lighting to improve public safety, especially for women and vulnerable groups.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Digital Inclusion Targets

- NDT aims for **2.6 million new mobile internet users** by 2030, raising adoption to **61% of population**.
- **Bridging regional divides**: enabling citizens in Casamance, Kaffrine, Kédougou, Louga and other underserved areas to access digital opportunities.
- Expanding access to digital health, education, government services.
- **Source**: https://www.gsma.com/newsroom/press-release/new-gsma-report-shows-digital-reforms-could-connect-2-6-million-more-people-in-senegal/

Digital Divide Challenges

- **54% usage gap** exists despite infrastructure availability.
- **27% of older people** in African urban areas lack internet access (general African statistic applicable to Senegal).
- **1GB data costs 7.12% of average monthly income** far exceeding Broadband Commission affordability target.
- **Source**: https://www.gsma.com/newsroom/press-release/new-gsma-report-shows-digital-reforms-could-connect-2-6-million-more-people-in-senegal/

Healthcare Digitization

- **$50 million** investment to digitize healthcare system, improving access particularly in remote and underserved areas.
- Electronic health records, telemedicine services, digital diagnostics.
- Enhanced data management for disease surveillance and evidence-based policies.
- **Source**: https://empowerafrica.com/senegal-gets-50-million-from-world-bank-to-digitize-its-healthcare-system/

Education and Training

- **Smart education** component supports universities and educational establishments through Smart Sénégal program.
- Smart classrooms in middle and high schools deployed.
- University recording studios installed.
- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal
- Digital Technology Park Training Center to upskill local workforce.
- **Source**: https://www.wearetech.africa/en/fils-uk/news/tech/senegal-digital-technology-park-to-open-in-march-2026

Regional Development - Casamance

- **"Diomaye Plan for Casamance"** seeks to strengthen peace and revive local economy.
- Projects include second Ziguinchor bridge, Sénoba–Ziguinchor road, Fouladou loop, Tanaff–Sédhiou road.
- **XOF 5 billion** Emergency Program for Modernization of Border Areas (PUMA).
- **Source**: https://www.ecofinagency.com/news-infrastructures/2910-49950-senegal-allocates-837-million-to-transport-infrastructure-in-2026-finance-bill

Housing Development

- **Diamniadio planned for 45,000 homes** for population of 350,000.
- Addressing poor state of housing and unattainable real estate prices in Dakar.
- **Source**: https://african.business/2023/04/dossier/senegals-new-urban-clusters-to-ease-congestion-and-drive-growth; https://www.africanews.com/2018/10/25/senegal-building-new-city-in-bid-to-ease-congestion-in-dakar/

---

8. Environmental Benefit

Electric Transport

- **First fully electric BRT in Africa region**.
- 144 electric buses powered by solar-generated renewable energy.
- Zero emission urban transport reducing greenhouse gas emissions.
- BRT modeling shows greatest potential benefits for keeping global warming below 1.5 degrees through shift-avoid-improve policies.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Modal Shift

- Mode shift from private vehicles possible with better quality public transport.
- Promotes active mobility and mixed-use neighborhoods.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Climate Resilience

- **Digital Economy Acceleration Project** includes component on "Strengthening Climate-Informed Legal, Regulatory and Institutional Environment."
- Goal to build "**newly built or upgraded digital infrastructure that is resilient to climate related shocks**."
- **Source**: https://documents1.worldbank.org/curated/en/099051425164020574/pdf/P172524-d9237e41-50dc-496d-b4db-7af40dfd6899.pdf

Renewable Energy in Diamniadio

- **15 MW solar power plant** for city.
- Climate-responsive building designs with natural ventilation.
- Water management systems and ecosystem conservation.
- Green corridors integrated into urban planning.
- **Source**: https://7wondersfc.com/participants/diamniadio

Congestion Reduction

- Diamniadio development aims to ease "mounting overcrowding and traffic congestion in Dakar."

- Dakar surrounded on three sides by Atlantic Ocean making congestion particularly problematic.
- **Source**: https://www.africanews.com/2018/10/25/senegal-building-new-city-in-bid-to-ease-congestion-in-dakar/

Green Spaces

- Well-planned green spaces in Diamniadio design.
- Dakar Resilience Strategy aims to build more green spaces for better waste management.
- **Source**: https://7wondersfc.com/participants/diamniadio; https://resilientcitiesnetwork.org/downloadable_resources/Network/Dakar-Resilience-Strategy-English.pdf

---

9. Economic Benefit

Job Creation Projections

- NDT targets **150,000 direct jobs** and **200,000 indirect jobs** in digital sector by 2034.
- **5,000 new digital jobs annually**.
- **Source**: https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an
- GSMA report projects digital reforms could create **280,000 new jobs** by 2030.
- **Source**: https://www.gsma.com/newsroom/press-release/new-gsma-report-shows-digital-reforms-could-connect-2-6-million-more-people-in-senegal/
- Diamniadio estimated to create **35,000 direct** and **105,000 indirect jobs** by 2025.
- **Source**: https://7wondersfc.com/participants/diamniadio

GDP Contribution

- NDT target: **15% contribution to GDP** from digital sector by 2034 (up from current 6.3%).
- **Source**: https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an
- GSMA projects **FCFA 1,100 billion in economic value** generated by 2030.

- **FCFA 417 billion** increase in national revenue.
- **Source**: https://www.gsma.com/newsroom/press-release/new-gsma-report-shows-digital-reforms-could-connect-2-6-million-more-people-in-senegal/

Startup Ecosystem

- NDT target: **over 500 recognized tech startups** by 2034.
- Digital Technology Park includes start-up incubator.
- **Source**: https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an; https://www.wearetech.africa/en/fils-uk/news/tech/senegal-digital-technology-park-to-open-in-march-2026

Export of Digital Services

- Goal to be one of **Africa's top three exporters of digital services by 2034**.
- **Source**: https://african.business/2025/10/innov-africa-deals/senegals-new-deal-technologique-horizon-2034-building-digital-sovereignty-an

Public Sector Efficiency

- Cost savings from moving ministries out of rented facilities into owned Diamniadio headquarters.
- "Savings will come from moving ministries out of rented facilities into new headquarters, which we will reimburse through monthly payments until we have bought back the buildings."
- **Source**: https://qz.com/africa/1352926/will-senegals-diamniadio-city-solve-dakars-problems

Private Sector Competitiveness

- **Senegal Digital for Inclusive Growth** report shows "strong links between use of technologies and higher sales, and better and more jobs."
- New financing mechanisms through digital technologies facilitate delivery of credit without burdensome collateral.
- **Source**: https://blogs.worldbank.org/en/africacan/how-digital-technologies-help-senegal-create-better-and-more-jobs

Industrial Development

- **Diamniadio industrial park** has four operational buildings, main one occupied by C&H Garment Manufactury (Chinese company manufacturing clothes for export).
- China promised **$105 million** for second industrial phase.
- **Source**: https://qz.com/africa/1352926/will-senegals-diamniadio-city-solve-dakars-problems

Tourism and Creative Industries

- Digital Technology Park Audiovisual Production Centre aims to position Senegal as **regional hub for creative industries** including cinema, animation, video games, post-production.
- **Source**: https://datacentresafrica.com/news-details?itemid=7235&post=senegal-resumes-construction-of-digital-technologies-park-662176

Dakar-Bamako Trade Corridor

- Budget supports upgrading Dakar–Bamako corridor, strategic trade route for West Africa.
- Goal of **cutting travel time by 30%**.
- **Source**: https://www.ecofinagency.com/news-infrastructures/2910-49950-senegal-allocates-837-million-to-transport-infrastructure-in-2026-finance-bill

---

10. Systems

Digital Public Services Platform

- **Senegal Services portal** (senegalservices.sn) provides single entry point to all public services.
- **Over 750 procedures** available digitally.
- **45 Senegal Services spaces** (one-stop shops) installed in departments nationwide.
- Services include: civil status certificates, criminal records, tax ID, construction permits, tour guide cards, diploma copies.
- Mobile app available on Google Play.
- **Source**: https://we.hse.ru/en/irs/cas/passsn; https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Smart Sénégal Components

Five main components of Smart Sénégal program:

1. **Submarine cable** to strengthen broadband
2. **Konectel**: WiFi in major public places
3. **Safe City**: Deployment of surveillance cameras (nearly 500 cameras in 4 command centers)
4. **Smart Education**: Supporting universities and educational establishments
5. **Senegal Services spaces**: One-stop shops in 45 departments

- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Transport Management Systems

- **Bus Rapid Transit (BRT)**: 18.3km fully electric system with 144 e-buses, 32 feeder routes.
- **Regional Express Train (TER)**: 55km line with 14 stations, 15 dual-mode trainsets.
- **Integrated ticketing** across TER, BRT, and boat services.
- **Intelligent Transport Systems (ITS)** for system monitoring.
- **European Rail Traffic Management System (ERTMS)** level two.
- **Real-time passenger information** systems.
- **Source**: https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/; https://www.railway-technology.com/projects/dakar-regional-express-train/

Urban Traffic Control

- Cutting-edge **urban traffic-control system** being deployed in partnership with Huawei.
- **Source**: https://energycapitalpower.com/top-5-initiatives-shaping-dakars-urban-mobility/

Data Center Infrastructure

- **Diamniadio National Datacenter** (Tier 3 level).
- Connected to **6,000 km State optical fiber**.
- Connected to submarine cable with **100 Gb/s capacity expandable to 2 Tb/s**.
- Hosts administration and private sector data.

- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Energy Management

- **Smart grid** for efficient energy distribution at Eko Atlantic (example of smart urban planning).
- Real-time monitoring prioritizing critical areas during peak hours.
- Integration of renewable energy including solar power.
- **15 MW solar power plant** for Diamniadio.
- **Source**: https://energycapitalpower.com/top-5-initiatives-shaping-dakars-urban-mobility/; https://7wondersfc.com/participants/diamniadio

Digital Health Systems

- **E-health platforms** being developed under Digital Economy Acceleration Project.
- Electronic medical records system.
- Telemedicine services.
- Digital diagnostics.
- **$50 million** World Bank investment for digitization.
- **Source**: https://empowerafrica.com/senegal-gets-50-million-from-world-bank-to-digitize-its-healthcare-system/; https://documents1.worldbank.org/curated/en/099051425164020574/pdf/P172524-d9237e41-50dc-496d-b4db-7af40dfd6899.pdf

Education Technology

- **University recording studios**.
- **Smart classrooms** in middle and high schools.
- Training centers at Digital Technology Park.
- **Amadou Mahtar Mbow University (UAM)** in Diamniadio fit for 30,000 students.
- **Source**: https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal; https://qz.com/africa/1352926/will-senegals-diamniadio-city-solve-dakars-problems

Surveillance and Security Systems

- **Nearly 500 CCTV cameras** connected to 4 command centers (Dakar, Saly, Saint-Louis, Kaolack).
- **Defense and Security Forces Command Centers**.
- CCTV in transport systems (TER, BRT, airport).
- **Source**: https://senegalnumeriquesa.sn/en/projets/smart-s%C3%A9n%C3%A9gal; https://senegalnumeriquesa.sn/en/actualites/le-datacenter-de-diamniadio-lieu-d%E2%80%99impulsion-de-la-transformation-digitale-du-s%C3%A9n%C3%A9gal

Airport Infrastructure

- **Blaise Diagne International Airport (AIBD)** (opened December 2017).
- Smart surveillance and parking management (Hikvision).
- Connected via TER Phase 2 (operational 2025).
- Upgrades funded in 2026 budget.
- **Source**: https://www.sourcesecurity.com/news/senegal-international-airport-chooses-smart-surveillance-co-3425-ga.1646726018.html; https://en.wikipedia.org/wiki/Diamniadio_Lake_City

Conference and Administrative Facilities

- **Abdou Diouf International Conference Center (CICAD)** in Diamniadio.
- **Dakar Arena** sports complex.
- **15 ministries** relocated to Ministerial City in Diamniadio.
- United Nations House (opening planned).
- **Source**: https://www.borgenproject.org/smart-tech-cities-in-africa/; https://african.business/2023/04/dossier/senegals-new-urban-clusters-to-ease-congestion-and-drive-growth

Water and Waste Management

- Water management systems in Diamniadio.
- Waste management facilities planned.
- **Source**: https://7wondersfc.com/participants/diamniadio

Satellite Systems

- Plans for satellite rollout to **connect one million citizens by 2026**.

- Space and satellite technology included in NDT flagship programs.
- **Source**: https://spaceinafrica.com/2025/12/10/senegal-to-connect-one-million-citizens-via-satellite-rollout-by-2026/; https://www.equaltimes.org/the-challenge-of-developing-the

Digital Payment and Financial Services

- **Mobile money** and **digital payments** being accelerated.
- Electronic banking penetration target.
- **Source**: https://we.hse.ru/en/irs/cas/passsn

Interoperability Platform

- **Government interoperability platform** being implemented under Digital Economy Acceleration Project.
- Interoperability standards to be endorsed and disseminated to ministries, departments, and agencies.
- **Source**: https://documents1.worldbank.org/curated/en/099051425164020574/pdf/P172524-d9237e41-50dc-496d-b4db-7af40dfd6899.pdf

---

Additional Notes

Notto Diobasse Smart City

- **Municipal program** for planning and development of modern town.
- Located **10 km from Blaise Diagne International Airport**, 60 km from Dakar.
- On Dakar-Touba axis in Senegal's agricultural basin.
- Features **Smart University of Notto Diobasse**.
- Aims to be regional industrial hub, relieving congestion in Dakar.
- **Source**: https://nottosmartcity.com/en/

Failed Projects

- **Akon City**: $6 billion futuristic city project **abandoned** as of July 2025.

- 800-hectare site in Mbodiène (100km south of Dakar) remains largely vacant with only unfinished reception building.
- Insufficient funding and suspended construction cited as factors.
- Government collaborating with Akon on "more realistic" development project for same location.
- **Source**: https://www.bbc.co.uk/news/articles/c8xvrv21drjo

Regional Context

- Dakar has **over 3 million people** living in city surrounded on three sides by Atlantic Ocean.
- Real estate prices soaring, housing unattainable even for middle class.
- **Source**: https://www.africanews.com/2018/10/25/senegal-building-new-city-in-bid-to-ease-congestion-in-dakar/

International Cooperation

- **GIZ (German cooperation)**: Supporting digital transformation through Digital Transformation Center Senegal, developing interoperable and inclusive digital administrative services.
- **Smart Africa Alliance**: Senegal participates in continental initiatives.
- **UNDP**: Highlighted willingness to support Digital Senegal 2025 goals.
- **ITDP (Institute for Transportation & Development Policy)**: Provided technical assistance for BRT planning and design.
- **Source**: https://www.giz.de/sites/default/files/media/pkb-document/2025-11/giz2025-en-goin-digital.pdf; https://we.hse.ru/en/irs/cas/passsn; https://itdp.org/2024/03/22/dakar-senegals-electric-brt-leads-the-way-for-african-cities/

Academic and Research Institutions

- **Dakar Institute of Technology (DIT)**: Specializing in AI and big data management, attracting students from across Africa.
- **Cheikh Anta Diop University (UCAD)** Faculty of Science and Technology.
- **Cheikh Hamidou Kane National University** (formerly Virtual University of Senegal).
- **ESP Dakar**: Cited as model for digital training.
- **Source**: https://www.equaltimes.org/the-challenge-of-developing-the

Note: This compilation represents comprehensive extraction from news sources as of January 2026. Information has been organized according to the 10 smart city research categories specified in smart_city_research_categories.csv. URLs are provided for each source citation to enable verification and further research.