i2 NEWSLETTER
Improvising Innovations

CSM™

FROM PLOTS TO PLATFORMS

REINVENTING LAND FOR INDUSTRY

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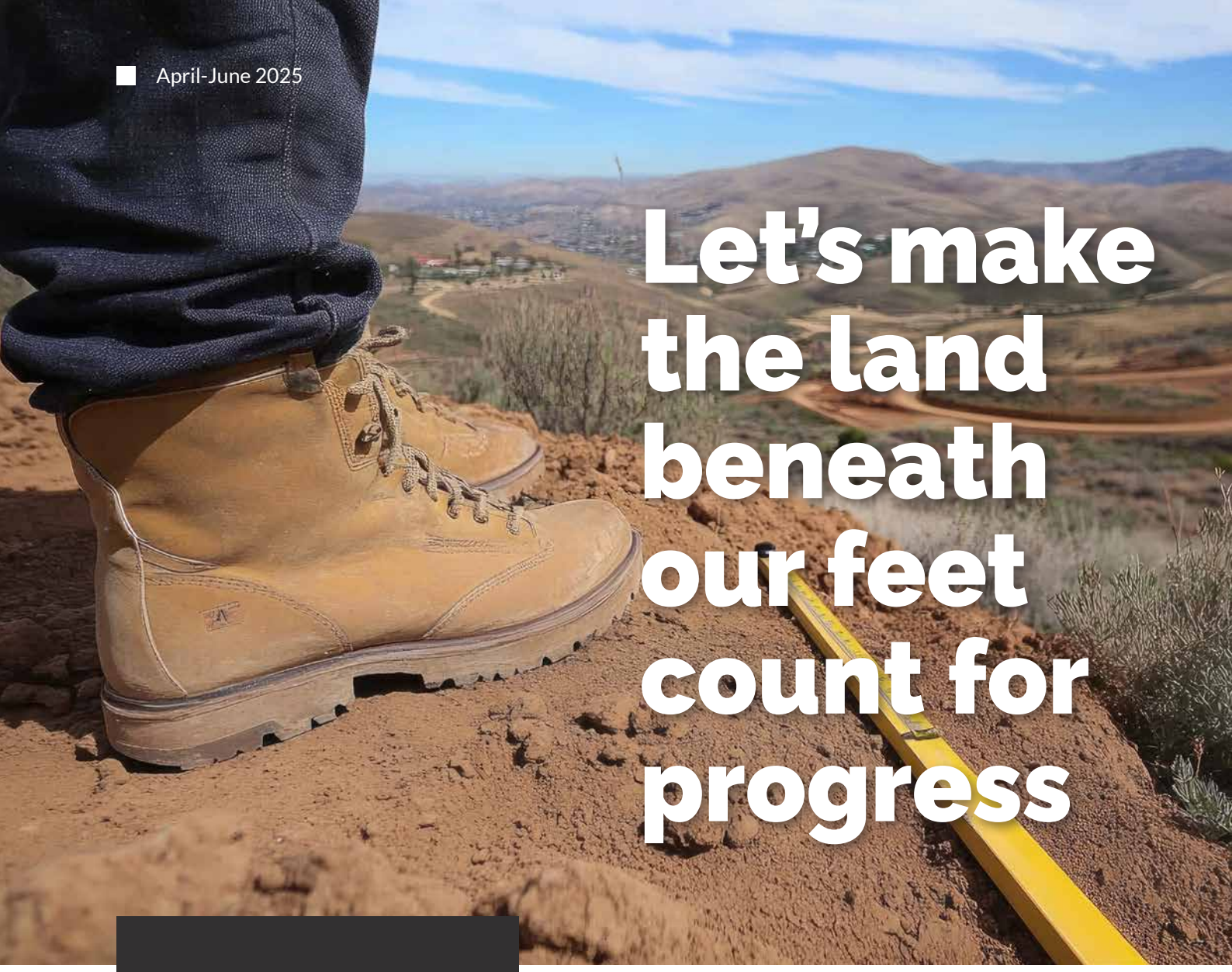


Let's make the land beneath our feet count for progress

From the Desk of

Founder & CEO

Ever walked past a piece of empty land – maybe on your commute or during a weekend drive – and wondered about its story? Who owns it? What could it become? A bustling factory? A vital logistics hub? A new community? For too long, the answers to those questions have been buried under mountains of paper, lost in dusty archives, or tangled in bureaucratic red tape. It's a frustration investors and developers know all too well, and it's a massive brake on the industrial engine our regions desperately need to thrive. You have seen the headlines about stalled projects and missed opportunities.

That's where we come in. Think of the feeling you get when you untangle a complex code block or architect a solution? Imagine applying that

power to the very foundation of industrial progress: the land itself. That's the heart of our mission with our Digital Land Management Solutions like LANDMAS designed for investor facilitation and industrial growth.

India's industrial ambitions ride on one decisive factor: Ease of land access for investors. And yet, time and again, promising investments stumble at the first hurdle - opaque land records, uncertain titles, fragmented data, and sluggish clearances. For an investor, this isn't just red tape - it's a red flag. Every delay erodes confidence. Every missing piece of information drains momentum.

From the lens of industry, this is more than an administrative snag - it's a lost manufacturing unit, an unrealized job hub, a GDP point left on the table.

At CSM, we see this not as a dead-end, but a design flaw pining for intelligent intervention. And we are building the digital rails to fix it. That's because when land data is clean, mapped, and accessible, investor decisions are faster, risk perception is lower, and industrial projects get a real headstart.

For us, investor facilitation is not about incentives alone - it's about instilling certainty. And that certainty begins with digital land systems that work seamlessly, speak transparently, and deliver instantly.

Through future-ready solutions like LANDMAS, we have brought transparency, clarity, and speed into the equation. We have turned opaque paper trails into geospatial narratives that speak to investors in a language they understand - data.

This isn't just about software, team. This is about catalyzing real-world impact. When we streamline land management, we remove the biggest roadblocks. We empower governments to attract serious investment.

I see the incredible talent, passion, and ingenuity within you all every single day. You build the complex, the robust, the transformative. You understand that technology, wielded right, isn't just a tool – it's a force multiplier for progress. The work we are doing on Digital Land Management is arguably some of the most consequential for tangible, large-scale economic growth. It's about building the digital bedrock upon which physical prosperity rises.

Every investor facilitated is a vote of confidence in our innovation. And every state that partners with us is choosing progress over inertia. Let's double down on this mission. Let's innovate faster, collaborate better, and listen deeper to the real pain points of land governance.

Together, we're not just managing land - we are architecting the future.

Editorial

Land for Growth: Bridging Infrastructure and Industry in the Age of Smart Governance

Bibhuti Bhusan Routray
Head Marketing,
Marketing

Beyond labour costs and market access, one factor consistently determines success or failure: the speed and transparency of land acquisition processes. In today's hyper-competitive business environment, delays in securing industrial land can mean the difference between capturing market opportunities and losing them to more agile competitors.

This reality has sparked a global transformation in how governments approach land facilitation for industrial development. From the bustling industrial corridors of Asia to the innovation hubs of Europe, nations are discovering that smart governance technologies can convert what was once bureaucratic quicksand into streamlined pathways for business growth.

The Traditional Land Acquisition Challenge

For decades, industrial land acquisition followed predictable patterns of inefficiency. Multiple agencies operated in silos, documentation requirements varied across departments, and approval timelines stretched indefinitely. Investors frequently abandoned promising projects not due to economic viability concerns, but because of administrative complexity. This systemic inefficiency created a hidden tax on industrial development, ultimately affecting job creation and economic growth.

The cost of these inefficiencies extended beyond individual businesses. Entire regions lost competitive advantages as investors migrated to jurisdictions offering clearer, faster processes. Nations began recognizing that in the global economy, administrative agility had become as crucial as traditional location factors like infrastructure and skilled workforce availability.

The Digital Governance Revolution

Enter the age of smart governance, where digital technologies fundamentally reimagine public administration. Geographic Information Systems (GIS) now provide real-time land availability data, while blockchain technology ensures transparent, tamper-proof documentation. Artificial intelligence algorithms can predict infrastructure requirements and optimize land allocation decisions, while integrated digital platforms eliminate the need for investors to navigate multiple agencies separately.

These technological interventions address the core friction points that historically plagued industrial development. Land title verification, which previously required weeks of manual documentation review, now occurs instantly through digitized records. Environmental clearances integrate seamlessly with planning approvals, and regulatory compliance becomes automated rather than reactive.

Global Leaders in Digital Land Facilitation

Singapore exemplifies how comprehensive digital transformation can revolutionize land administration. The city-state's integrated land information system consolidates all land-related data into a single, accessible platform. Investors can access real-time information about available industrial sites, existing infrastructure, zoning regulations, and approval requirements through a unified digital interface. This systematic approach has contributed to Singapore consistently ranking among the world's easiest places to conduct business.

South Korea's e-Land system represents another paradigm shift, providing stakeholders with immediate access to comprehensive land information while streamlining approval workflows. The system's real-time processing capabilities have reduced average land acquisition timelines from months to weeks, creating tangible competitive advantages for businesses operating within Korean industrial zones.

The Netherlands demonstrates how advanced digital cadastral systems can serve as foundations for transparent, efficient land administration. Their comprehensive digital framework not only accelerates individual transactions but provides government planners with sophisticated analytics capabilities, enabling more strategic long-term industrial development planning.

India's Economic Awakening Through Land Reform

India's experience demonstrates the profound economic impact of streamlined land facilitation. The country's dramatic improvement in the World Bank's Ease of Doing Business rankings tells a compelling story: India jumped 79 positions from 142nd (2014) to 63rd (2019) in 'World Bank's Ease of Doing Business Ranking 2020'. This remarkable transformation directly correlates with systematic reforms in land acquisition and clearance processes.

The economic stakes are substantial. As of 2010, delays in land acquisition for industrial projects were threatening investments worth USD 100 billion all over India in the near term. This statistic illustrates how bureaucratic inefficiencies in land processes can create systemic risks to national economic growth. When major corporations like ArcelorMittal and POSCO withdraw multibillion-dollar steel projects due to land acquisition complications, the ripple effects extend far beyond individual investments.

One study found that a quarter of large land development projects were stalled by land disputes, with the disputes usually focusing on compensation or feared environmental impacts. This data point reveals that inefficient land facilitation creates a 25% failure rate for major development initiatives, representing billions in stalled economic activity.

The transformation becomes evident in state-level competition for industrial investment. As per the Business Reform Action Plan implemented by India's Department of Industrial Policy and Promotion, Andhra Pradesh ranked first in the ease of doing business index with a total score of 98.3 percent on various indicators. States achieving high scores consistently attract disproportionate shares of new industrial investments, creating virtuous cycles of growth.

Frontrunners in Digital Land Management for Industry Facilitation in India

States like Odisha, Maharashtra, Tamil Nadu, Rajasthan and Karnataka are considered leaders in this domain. In fact, Odisha's rise as an industrial leader in part can be credited to its state-of-the-art investor facilitation system called GO-SWIFT. The state of Chhattisgarh has also recently commissioned its third-generation single window system for land and trade facilitation for industries.

In the state of Maharashtra an dunder the aegis of the Delhi Mumbai Industrial Corridor project, the Aurangabad Industrial Township Ltd. Has also developed its own land management system which was dedicated to the nation by Hon'ble Prime Minister Shri Narendra Modi in 2019.

The Business Case for Smart Land Facilitation

Modern businesses operate on compressed timelines where speed-to-market determines competitive advantage. A semiconductor manufacturer evaluating locations for

a new fabrication facility cannot afford year-long land acquisition processes when technological innovations cycle every eighteen months. Similarly, renewable energy developers must synchronize land acquisition with rapidly evolving regulatory incentives and market conditions.

Smart governance addresses these temporal pressures by creating predictable, transparent processes. When businesses can accurately forecast approval timelines and regulatory requirements, they can make more informed investment decisions and commit resources more efficiently. This predictability translates into increased foreign direct investment flows and accelerated domestic industrial expansion.

The Multiplier Effect

Efficient land facilitation creates cascading benefits throughout economic ecosystems. Primary industrial investments attract supporting service providers, creating employment clusters that drive broader regional development. Housing markets respond to employment growth, retail establishments follow population increases, and transportation infrastructure expands to serve growing commercial activity.

Technology amplifies these multiplier effects by enabling more strategic land use planning. Predictive analytics help governments identify optimal locations for different industrial categories, while integrated systems can coordinate infrastructure development with industrial expansion timelines.

The next generation of smart land facilitation will leverage emerging technologies including Internet of Things sensors for real-time infrastructure monitoring, machine learning algorithms for predictive maintenance planning, and virtual reality platforms for remote site evaluation. These innovations promise to further compress transaction timelines while improving decision-making quality.

As global competition for investment intensifies, jurisdictions that master technology-enabled land facilitation will capture disproportionate shares of industrial development. The transformation from bureaucratic obstacle to competitive advantage represents one of smart governance's most tangible contributions to economic development.

Cover Story

SMART LAND GOVERNANCE

How Africa and India Are Rewriting the Rules of Industrial Expansion

Jayajit Dash
Sr. Manager Corporate Communications, Marketing

In the high-stakes world of industrial expansion, land isn't just a commodity - it's the launchpad. And in today's digital era, the clarity of that launchpad determines whether industries take off or remain grounded. Across Africa and India, a quiet revolution is redefining how governments, investors, and citizens perceive and utilize land. It's called smart land governance, and it's powered by the digitization of land records.

From the arid plains of Rajasthan to the fertile heartlands of Kenya, digital land records are dismantling age-old roadblocks: opaque ownership, slow approvals, and costly disputes. In their place, a new order is emerging - transparent, efficient, and primed for industrial growth.

What is Smart Land Governance?

Smart land governance leverages technology to manage land resources efficiently, ensuring transparency, accessibility, and security in land records and transactions. Digital land records, a core component, replace outdated paper-based systems with real-time, verifiable data. This transformation is akin to upgrading from a dusty library to a cloud-based database, enabling stakeholders - investors, developers, and governments to access critical information instantly. By reducing uncertainties in land ownership, smart governance creates a predictable environment for industrial projects, fostering economic growth.

The Transparency Catalyst: From Paper Chaos to Digital Clarity in India

Think of traditional land records as a game of telephone played across generations - each transfer, each handwritten entry, each bureaucratic layer adding potential for error and manipulation. Digital land records are like replacing that telephone game with a blockchain-verified video call. The transformation is that dramatic.

In India, the Digital India Land Records Modernization Programme (DILRMP) has digitized an astounding 95% of rural land records across over 625,000 villages. This isn't just about moving from paper to pixels - it's about creating an ecosystem where industrial investors can operate with confidence. When Gujarat's AnyR OR system reduced land disputes and streamlined transactions, it didn't just help farmers; it created the predictable environment that Special Economic Zones (SEZs) needed to flourish.

The numbers speak volumes: SEZ exports in India skyrocketed from Rs 228.40 billion in 2005-06 to Rs 7,595.24 billion in 2020-21, while employment in these zones reached 2.35 million people. This explosion of industrial activity coincided directly with digital land governance initiatives.

Africa: Emerging Trends in Digital Land Governance

Initiatives and Progress

Africa is making strides in digital land governance. The Africa Open DEAL, led by the FAO and African Union Commission, completed comprehensive land use data collection by 2020, identifying 7 billion trees and 350 million hectares of cropland - a 25% increase over prior estimates. Using tools like Collect Earth, this initiative provides detailed data for land planning. Country-specific efforts include:

Kenya's Ardhisasa

Launched in 2021, this platform enables digital access to land records in Nairobi and Murang'a counties, with plans for nationwide expansion. It supports online searches, title deed processing, and payments, reducing corruption.

Rwanda's National Cadaster

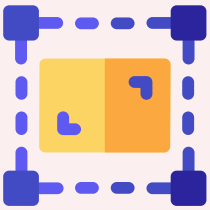
By 2023, Rwanda fully digitized its land registry, with 86% of titles including women, enhancing tenure security.

Impact on Industrial Expansion

Research suggests that improved land tenure security encourages investment by reducing dispute risks. In Kenya, Ardhisasa has increased borrowing by 9%, with 23% of loans used for business investments, including textiles and garments. In Rwanda, integrating land data with agro-ecological insights has facilitated agro-processing investments, a key industrial sector. While direct case studies linking digital records to industrial growth are limited, the World Bank notes that robust land institutions support urban expansion and structural transformation, critical for industry. For example, secure tenure has boosted non-farm activities like food processing and woodworking, laying the groundwork for industrial growth.

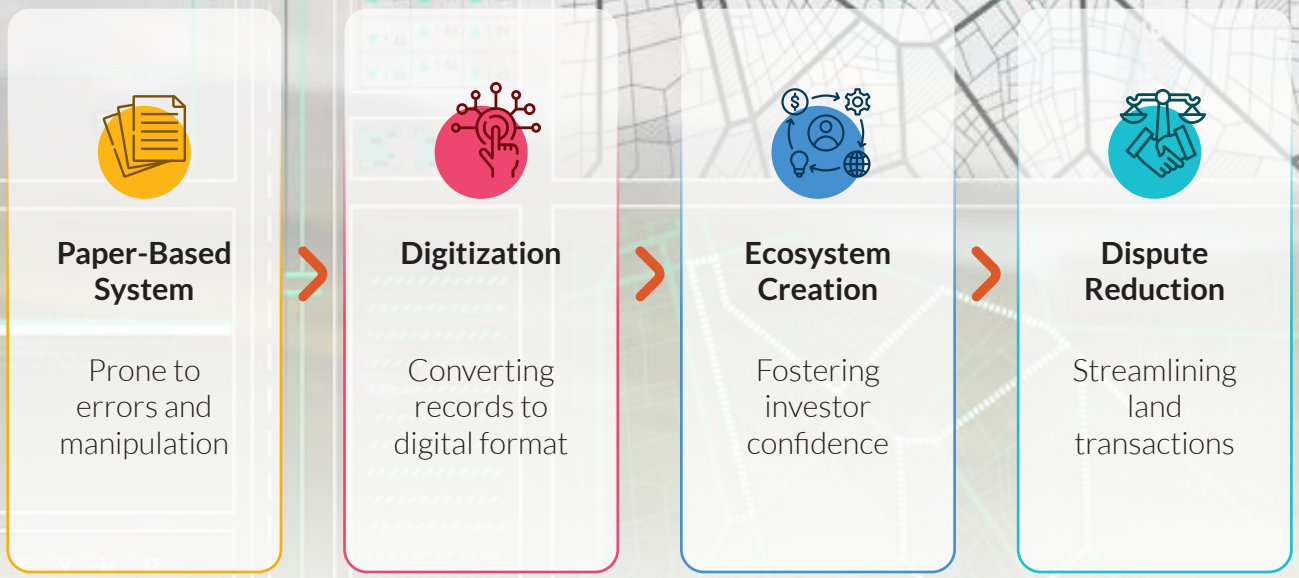
Comparative Analysis:

Digital Land Records & Industrial Growth in Africa vs. India



Aspect	Africa	India
Key Initiatives	Africa Open DEAL, Ardhisasa, Rwanda's cadaster	DILRMP, Meebhoomi, AnyROR, MP Bhulekh, UP Bhulekh
Digitization Progress	Comprehensive data by 2020, Rwanda fully digitized by 2023	98.5% rural records digitized by 2025, 68.02% cadastral maps
Impact on Industry	Supports planning, encourages investment, limited direct evidence	Boosts SEZs, reduces disputes, increases investment and employment
Technologies	Collect Earth, GIS, satellite imagery	GIS, ULPIN, Aadhaar integration, NGDRS
Challenges	Digital access, informal transactions	Digital divide, connectivity, privacy
Future Prospects	Expand infrastructure, leverage AfCFTA	Mobile apps, standardization, blockchain integration

Digital Land Records Transformation



Challenges in the Digital Journey

However, the road to smart land governance is not without potholes.

In Africa, informal land transactions and limited digital literacy remain barriers. In India, connectivity gaps and privacy concerns linger. Both continents must also battle institutional inertia and resistance to change.

But there's hope and it lies in technology. Emerging tools like AI for fraud detection, blockchain for immutable land titles, and mobile-first platforms are set to future-proof these systems. The key lies in policy alignment, infrastructure investment, and citizen engagement.

A Vision Beyond the Horizon

What if Africa and India - home to 2.8 billion people, could unlock industrial growth simply by making land information accessible and reliable?

That's not a dream. It's a policy away from reality.

By 2030, both regions could lead the world in data-integrated land management, setting global benchmarks for ease of doing business in emerging economies. But this demands action.

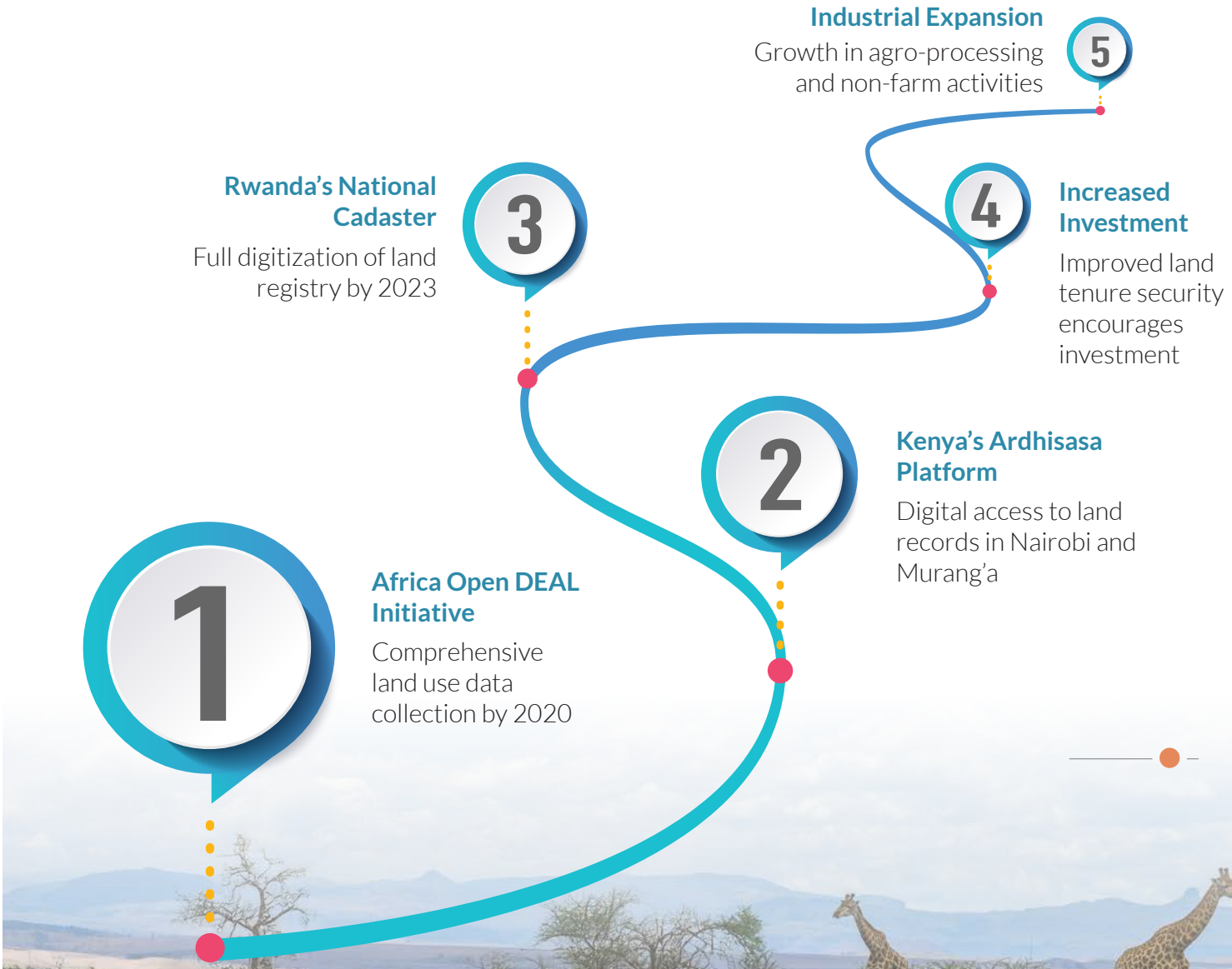
For tech entrepreneurs:
The intersection of Proptech, Govtech, and industrial development presents unprecedented opportunities. Build solutions that bridge the digital divide. Create

APIs that connect land records to broader economic ecosystems. Develop AI tools that can predict and prevent land disputes before they occur.

For government leaders: Digital land governance is infrastructure - invest in it like roads and power. Ensure interoperability between systems. Prioritize user experience for both citizens and businesses. Remember that transparency isn't just good governance; it's economic development strategy.

The land beneath our feet is no longer just soil - it's data, opportunity, and power. Let's digitize it, democratize it, and use it to build the industries of tomorrow.

Digital Land Governance in Africa



Geo-Intelligence for Industrial Zoning

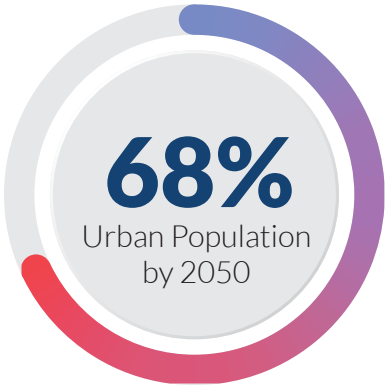
GIS at the Heart of Land Use Planning

Tarini Prasad Ray
Digital Marketing Executive, Marketing

As the global economy evolves and urban populations grow rapidly, the importance of strategic land use planning has become increasingly critical. Land is not just a physical asset, it is a foundation for economic, social, and environmental development. Today, geo-intelligence powered by Geographic Information Systems (GIS) is playing a transformative role in how industrial zones are planned and managed, ensuring better efficiency, transparency, and sustainability.

The Changing Landscape of
Urbanization and Investment

With more than **68%** of the world's population expected to live in urban areas by the year **2050**, the pressure on governments to improve infrastructure and facilitate industrial development has intensified.



At the same time, global foreign direct investment reached **$1.5 trillion** in marking a significant rise as countries compete to attract international capital. To stay competitive and investor-friendly, governments must streamline their business ecosystems, and land management stands out as a key component in that journey.

$1.5
TRILLION

Challenges in Traditional Land Management

In the past, land management processes were largely manual, involving multiple government departments, time-consuming approvals, and limited transparency. Investors faced delays, miscommunication, and a lack of accountability throughout the land allotment lifecycle. These challenges hindered development and discouraged potential investors.

Some of the common issues included:

- Delays in land allotment and approvals due to manual workflows.
- Absence of tracking mechanisms and monitoring.
- Lack of transparency and coordination between stakeholders.
- Limited understanding of the long-term benefits of sustainable land practices.

Geo-Intelligence and GIS: A New Era in Zoning

Geo-intelligence using GIS enables policymakers to visualize, analyze, and interpret spatial data for better land use decisions. GIS allows planners to overlay multiple data layers such as transportation access, topography, flood risk, soil quality, and proximity to utilities. This supports data-driven identification of land that is most suitable for industrial purposes, eliminating guesswork and aligning with broader environmental and economic goals.

Through GIS, authorities can ensure that industrial zones are not only well-placed but also equipped to support long-term growth and sustainability.

Case Study: e-LMS Implementation for AURIC

A notable example of GIS-driven land reform is the e-Land Management System (e-LMS) implemented by Aurangabad Industrial Township Limited (AITL) for AURIC, a Greenfield smart industrial city under the Delhi-Mumbai Industrial Corridor. The system enables a seamless digital experience across the entire land lifecycle, from pre-allotment to post-allotment, integrating GIS-based land selection, online approvals, real-time communication, and mobile access. This single-window platform has significantly reduced processing time, enhanced transparency, and made AURIC a model for investor-friendly industrial governance.

What CSM Tech Brings to Land & Industry

As a leading GovTech innovator, CSM Tech specializes in designing and implementing scalable, tech-enabled platforms for land and industrial development. With proven experience in systems like e-LMS, CSM empowers governments with GIS-driven land management solutions, integrated investor facilitation portals, and workflow-based approval systems. By eliminating manual bottlenecks, ensuring real-time visibility, and promoting transparent governance, CSM Tech strengthens the Ease of Doing Business (EoDB) and accelerates industrial growth through digital transformation.

Paving the Way for Smarter Industrial Development

Geo-intelligence powered by GIS has become the backbone of modern industrial zoning and land use planning. By drawing inspiration from success stories like e-LMS at AURIC and leveraging the capabilities of solution providers like CSM Tech, governments are not only improving their business readiness but also laying the foundation for inclusive and sustainable economic growth. As global competition for investment intensifies, embracing digital transformation in land management is not just beneficial, it is essential for building the industrial landscapes of the future.

ONE PORTAL, MANY POSSIBILITIES:

Single Window Clearance for Industrial Land Allotments

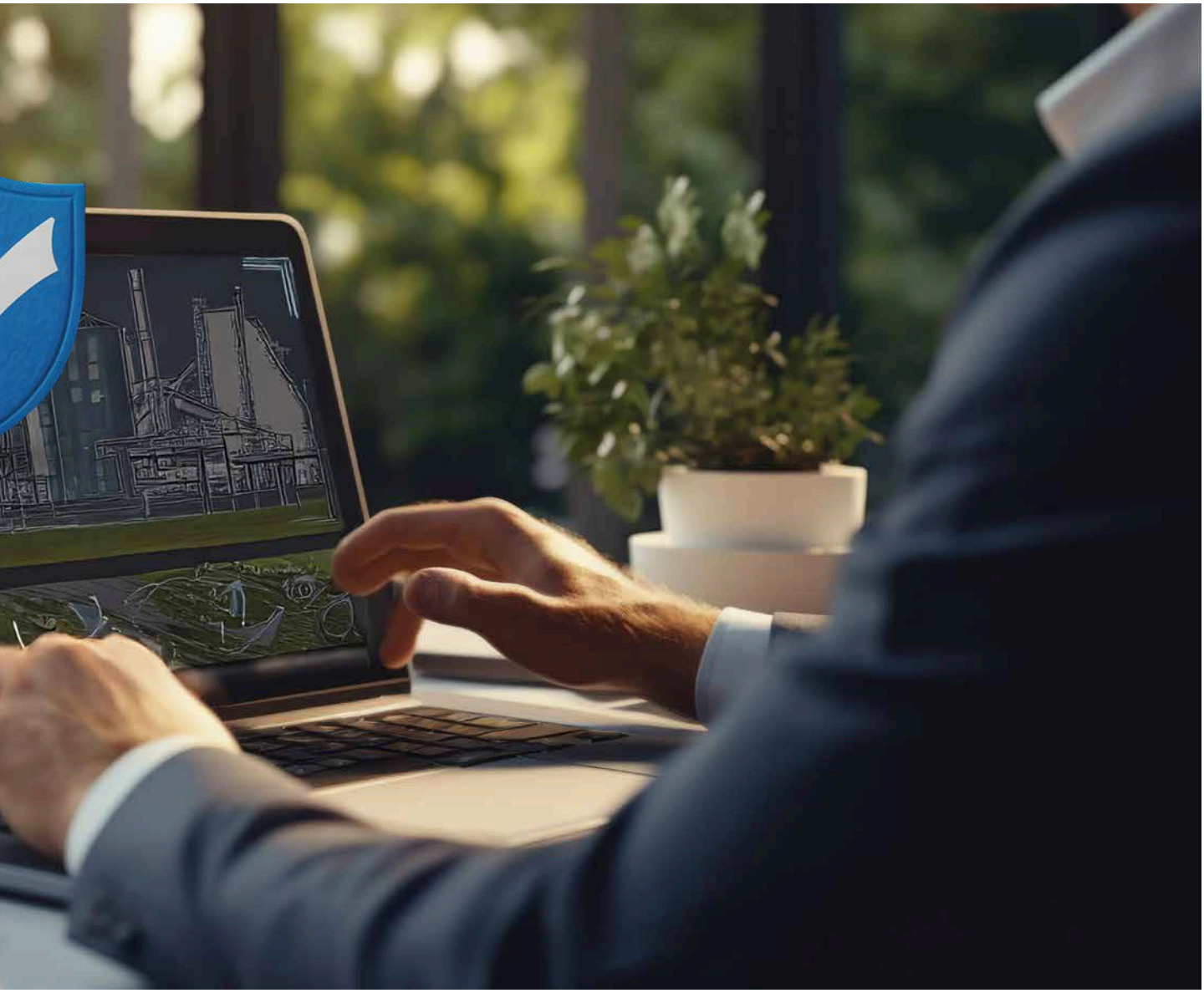
Malvika Rathore
Consultant-Marketing Communication

Across emerging economies, the ability to attract and retain industrial investment increasingly hinges on how efficiently land-related services are delivered. With rising investor expectations and complex administrative ecosystems, digital governance in land management has shifted from optional to essential.

Governments are increasingly adopting single-window systems to streamline approvals, improve coordination, and modernize investor services. In the context of industrial land, these platforms consolidate clearances, permits, and post-allotment services. By reducing procedural friction and improving departmental collaboration, they enable faster, more predictable service delivery aligned with investment goals.

Real-World Functionality: Adapting to Governance Needs

One such implementation is CSM Technologies' Single Window System, adapted across geographies to support diverse governance needs. From orchestrating cross-departmental approvals to managing compliance, the system evolves with local industrial policies-without compromising scalability or consistency. Each deployment demonstrates how modular digital infrastructure supports governance while delivering streamlined, investor-facing services.



Digitizing the Entire Land Lifecycle

At Aurangabad Industrial City (AURIC) and Noida, the Enterprise Land Management System (eLMS) has digitized end-to-end land administration. Plot-level GIS mapping offers real-time visibility into land inventories, while digital workflows manage lease issuance, renewals, and compliance tracking. This implementation enables seamless coordination between planning authorities and investors throughout the land lifecycle.

Enabling Seamless Investor Approvals

Odisha's GO SWIFT (Government of Odisha – Single Window for Investor Facilitation and Tracking) showcases how Single Window platforms can orchestrate pre-establishment approvals across 15+ departments. With a Common Application Form, SLA-based application tracking, automated clearance workflows, and investor dashboards, the system has received around 4,800 proposals, with approved investments of over ₹16 lakh crore, and an employment potential of more than 10 lakh.

Centralizing Land Services for Industrial Clusters

At Ethio ICT Village—Ethiopia's first integrated ICT manufacturing hub—the Single Window Portal brought together key investor services, including cadastral GIS-based plot registration, online bidding and rent workflows, grievance redressal, and integration with national agencies such as Ethio Telecom, ERCA, and the Commercial Bank of Ethiopia. The platform unified previously siloed services and digitized the full allotment process.

Improving Interdepartmental Accountability

Chhattisgarh's Single Window System, implemented in collaboration with CHiPS, was configured to support interdepartmental coordination and time-bound approvals. Online submission of investor forms, SLA-monitored approval routing, and centralized grievance redressal ensure that procedural engagement is both transparent and accountable.

Governance Benefits: A Unified Approach to Industrial Land Management

The Single Window System strengthens industrial land governance by:

- **Integrated Workflows:** Combines land discovery, applications, approvals, payments, and post-allotment in one system
- **Real-Time Monitoring:** Tracks services via SLA-linked dashboards and grievance tools for better transparency
- **Investor-Centric Design:** Enables end-to-end digital interactions and coordinated approvals
- **Scalable Architecture:** Modular structure fits varied governance models and administrative needs

A Foundation for Investment-Ready Governance

From Ethiopia to Odisha and Noida to Chhattisgarh, these deployments reflect a structural shift in how governments manage industrial growth. By digitizing land-related services and aligning them with investment priorities, Single Window Systems foster institutional agility, policy responsiveness, and ease of doing business at scale. With field-tested success and built-in flexibility, one portal becomes the operational core of many coordinated possibilities.

How BRAP 2024 is Redefining Ease of Doing Business with Single Window Mandates

Jyoti Prakash Mishra
Digital Marketing Expert

If India wants to become a global business hub, it needs more than just good intentions. The need of frictionless systems that actually work for people. That's the spirit driving the Business Reforms Action Plan (BRAP) 2024, a major shift in how states are now being measured on ease of doing business (EoDB). Simply counting how many reforms were rolled out or showing large numbers of data on a dashboard isn't enough. Now, it's about how well those reforms perform; especially through one key lens: the Single Window Clearance System (SWCS).

So, what's the big deal about a Single Window? Imagine you're an entrepreneur, no more running between departments for a fire licence, trade permit, or land use approval. Instead, a single digital gateway handles it all. That's the promise of SWCS. And under BRAP 2024, it's now the standard.

What's new? States are expected to integrate services across key areas such as healthcare, excise, legal metrology, labour, logistics (PM Gati Shakti), contract enforcement, utility permits, and more into one cohesive platform. It's not just about having a portal anymore, but

about building an intelligent, end-to-end system that can even plug into the National Single Window System.

The government, through the Department for Promotion of Industry and Internal Trade (DPIIT), is pushing for real, integrated systems that simplify processes across departments, reduce paperwork, and most importantly make life easier for businesses and citizens alike. It's not just about being "online"; it's about being intuitive, intelligent and invisible in the best way possible.

What's really changing the game is technology. From real-time dashboards and API integrations to auto-verification of documents and AI-based query resolution, tech is no longer a backend helper, it's the main act. States that are investing in robust digital infrastructure, user-friendly interfaces, and data-driven decision-making will not only climb BRAP rankings and will win investor trust for sure.

To see where states currently stand, we've included a visual snapshot using BRAP 2022 survey data from DPIIT. It maps out how states fare in both B2G and C2G readiness; highlighting who's ahead, who's catching up, and who needs to rethink their approach. Interestingly, most states already have some form of Single Window system in place, but BRAP 2024 raises the bar. It's no longer enough to have a portal; the question now is – "does it truly offer end-to-end integration, real-time tracking, and a seamless experience as defined in the updated BRAP checklist?" For many, this means a rethink of architecture, user journeys, and inter-departmental coordination.

As BRAP 2024 unfolds, one thing is clear: this isn't just a competition for rankings. It's a race to relevance. States that take Single Window reforms seriously and back them with real tech and real commitment; will be the ones leading India's growth story.

Because in the end, ease of doing business isn't just about policies on paper. It's about people. And systems that work for them.

State/UT	State Category	B2G	C2G
Andaman & Nicobar Islands	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Andhra Pradesh	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Arunachal Pradesh	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Assam	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Bihar	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Chandigarh	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Chhattisgarh	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Dadar & Nagar Haveli and Daman & Diu	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Delhi	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Goa	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Gujarat	Y	Fast Mover (70–80%)	Aspirer (Below 70%)
Haryana	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Himachal Pradesh	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Jammu & Kashmir	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Jharkhand	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Karnataka	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Kerala	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Madhya Pradesh	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Maharashtra	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Manipur	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Meghalaya	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Mizoram	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Odisha	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Puducherry	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Punjab	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Rajasthan	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Tamil Nadu	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Telangana	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Tripura	X	Aspirer (Below 70%)	Aspirer (Below 70%)
Uttar Pradesh	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
Uttarakhand	Y	Aspirer (Below 70%)	Aspirer (Below 70%)
West Bengal	Y	Aspirer (Below 70%)	Aspirer (Below 70%)

SWS Revolution:

Tech Innovations Fuelling Ease of Doing Business

Tapaswini Swain
Lead-Marketing Communications, Marketing

India's journey toward becoming a business-friendly nation has been nothing short of transformative. At the heart of this evolution lies the concept of Ease of Doing Business (EoDB), with digital technology playing a pivotal role. One of the most significant innovations in this domain has been the Single Window System (SWS) – a platform that offers investors a unified interface for approvals, registrations, and compliance. Among the notable contributors to this transformation is CSM Tech, which has implemented robust single-window solutions for states such as Odisha, Maharashtra, and Chhattisgarh, creating benchmarks in industry facilitation and digital governance.

Why Single Window Matters

Traditionally, investors in India faced a daunting maze of approvals and paperwork across multiple departments. These fragmented workflows not only delayed project kick-offs but also eroded investor confidence. Enter the Single Window System—a paperless, contactless, and ICT-enabled platform designed to streamline investor journeys from land identification to post-establishment clearances.

According to NITI Aayog and DPIIT reports, such systems have contributed to a 35–40% reduction in documentation, brought down the average time to start a business from 38 days to 18, and helped digitize over 92% of land records across India. These advances directly correlate with India's leap in the World Bank's EoDB rankings—from 142nd in 2014 to 63rd in 2023.

CSM Tech's Flagship Implementations

CSM Tech has been at the forefront of transforming state-level investor facilitation through cutting-edge Single Window System (SWS) platforms. These digital ecosystems are designed to simplify, streamline, and digitize every stage of the investment lifecycle, significantly enhancing India's Ease of Doing Business (EoDB).

GO SWIFT – Odisha

Launched in 2016, GO SWIFT (Government of Odisha - Single Window for Investor Facilitation and Tracking) was among the first investor-centric SWS platforms in India. Developed by CSM Tech, the system offers a comprehensive suite of services including a GIS-based land bank for plot selection, dynamic plot control, and online building plan scrutiny. It automates fee calculation, enables technical personnel to be tagged, and generates digitally signed documents. This has drastically improved turnaround times for land allotment and post-allotment services. Investors benefit from real-time dashboards that track application status and enable them to receive production and incentive certificates digitally, ensuring transparency and ease of compliance.

e-LMS – Maharashtra (Aurangabad Industrial City - AURIC)

CSM Tech's e-LMS platform for Maharashtra's Aurangabad Industrial City (under MITL) encompasses the entire investor journey—from land application and DPR scoring to post-allotment services, including utility approvals, FSI purchases, and fire NoCs. It features dynamic GIS-based master planning, auto-generated MoMs and certificates, and paperless processes for services like Consent to Mortgage and Change in Land Use. QR-coded certificates and built-in verification tools ensure authenticity. The platform has enabled transparency, reduced disputes via digitized records, and supports sustainable industrial growth through continuous compliance tracking.

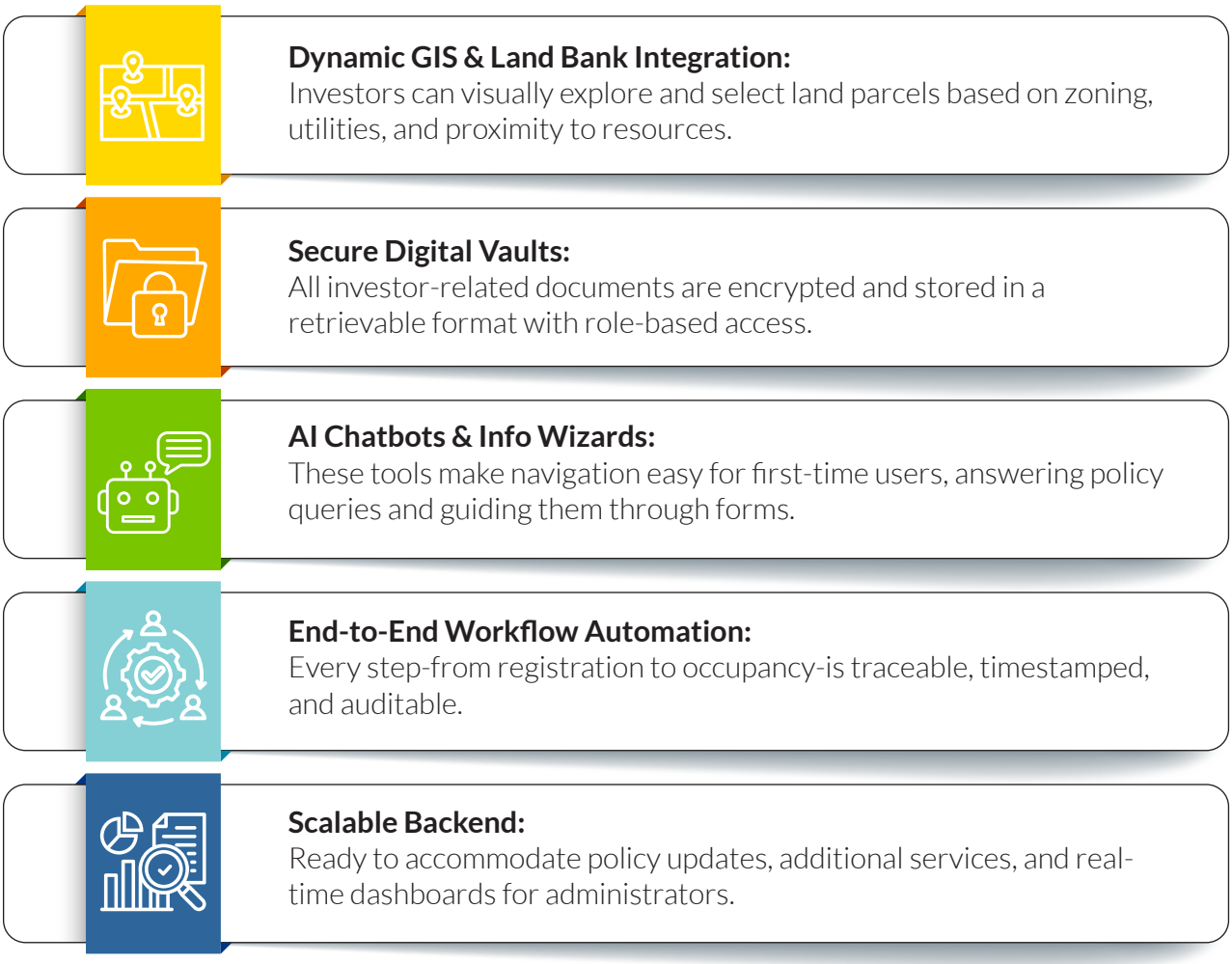
Single Window Platform – Chhattisgarh

The latest addition is the Chhattisgarh Industry Single Window Platform, launched in 2024 for CSIDC. It unifies land management, policy incentives, and investor services into one streamlined system. Key features include Udyam Akanksha 2.0 for automated industry classification, hierarchical workflows for MoU and SIPB approvals, and real-time QR-coded production/incentive certificates. The platform also provides grievance redressal, inspection management, secure document vaults, mobile app access, and chatbot support. Integrated with state APIs for Treasury and Revenue, it offers 30+ services via a mobile-friendly interface, dramatically reducing approval and payment delays.

Through these implementations, CSM Tech demonstrates how tailored digital platforms can accelerate state-level industrial growth and serve as models for SWS adoption across India.

The Technology Behind the Magic

The success of these systems lies in their modular architecture and API-first design. Some standout tech features include:



Dynamic GIS & Land Bank Integration:
Investors can visually explore and select land parcels based on zoning, utilities, and proximity to resources.

Secure Digital Vaults:
All investor-related documents are encrypted and stored in a retrievable format with role-based access.

AI Chatbots & Info Wizards:
These tools make navigation easy for first-time users, answering policy queries and guiding them through forms.

End-to-End Workflow Automation:
Every step-from registration to occupancy-is traceable, timestamped, and auditable.

Scalable Backend:
Ready to accommodate policy updates, additional services, and real-time dashboards for administrators.

Road Ahead and Conclusion

The Government of India's Single Window System (SWS) guidelines urge states to adopt unified digital platforms to streamline approvals and enhance Ease of Doing Business (EoDB). CSM Tech's implementations in Odisha, Maharashtra, and Chhattisgarh align with these norms, offering end-to-end automation—from land allotment to incentive disbursal.

For other states, adopting such systems ensures compliance, boosts investor confidence, and improves administrative efficiency. With integrated services, real-time tracking, and paperless operations, these platforms serve as a scalable model for states aiming to modernize governance and accelerate industrial growth in line with India's $5 trillion economy vision.

From Brownfields to Green Shoots

Smart Rehabilitation of Abandoned Industrial Lands

Across cities and industrial corridors, thousands of abandoned factories, warehouses, and contaminated lots—commonly referred to as brownfields—lie in decay. Once engines of economic activity, these spaces are now seen as liabilities. But what if these neglected sites could be transformed into sustainable, productive assets? With smart rehabilitation technologies and data-driven planning, that vision is no longer far-fetched.

Mousumi Rana
Marketing Manager, Marketing

The Case for Redevelopment

Brownfields are more than just wasted space; they carry the burden of soil contamination, public health concerns, and real estate stagnation. However, redeveloping them presents a strategic opportunity for governments and businesses alike. Rehabilitated brownfields can be converted into green zones, logistics hubs, renewable energy sites, or even affordable housing—reviving the local economy while supporting environmental goals.

Smart Technologies Driving Change

Digital solutions are revolutionizing how we identify, assess, and repurpose brownfield sites. Geographic Information Systems (GIS) help map contaminated zones and prioritize high-impact areas for intervention. AI-powered risk assessment tools analyze soil and groundwater data, offering precise mitigation strategies. Meanwhile, drones and IoT sensors enable real-time monitoring of environmental recovery efforts.

These technologies not only improve accuracy but also significantly reduce timelines and costs, enabling faster regulatory approvals and investor confidence.

Public-Private Synergy in Action

Successful brownfield redevelopment often hinges on strong public-private collaboration. Governments offer policy incentives, environmental clearances, and land records, while private players bring in technology, capital, and operational expertise. By aligning objectives, both sectors can de-risk large-scale rehabilitation projects and accelerate sustainable infrastructure development.

PPP (Public-Private Partnership)-led models have shown promise in creating industrial parks, innovation districts, and even clean energy zones on rehabilitated land—blending economic revitalization with environmental stewardship.

A Greener, Smarter Tomorrow

Transforming brownfields into green shoots isn't just a win for urban development—it's a blueprint for regenerative growth. With the right mix of technology, policy, and purpose, even the most desolate landscapes can flourish again.

LAND BANKS 2.0

Transforming Idle Land into Economic Opportunity

Bhagyashree Nanda
Marketing Communication Expert, Marketing

In a rapidly urbanizing world, where nearly 70% of the global population is expected to reside in urban areas by 2050, land has become a strategic resource for sustainable development. Yet, over 70% of land rights remain undocumented globally, impacting an estimated 2 billion people. Only 30% of the world's land is formally registered, with the number dropping to 10% in developing nations. Land banks, once seen as bureaucratic landholding units, are now transforming into powerful enablers of economic revitalization. Countries like the United States manage over 2.5 Lakh parcels through land banks, while the European Land Bank Association oversees more than 1.75 Lakh hectares of land. In China, rural land banks have consolidated over 3 million hectares of farmland since 2008. These numbers reveal a global consensus: digitizing and managing idle land can unlock massive potential for housing, industry, agriculture, and infrastructure.

The Evolution to Land Banks 2.0

Traditional land banks operated as static repositories for property, primarily handling abandoned, foreclosed, or underutilized assets. However, Land Banks 2.0 represent a shift toward a digital, dynamic platform that manages land as a critical economic driver. These modern systems are deeply integrated with Land Management Information Systems (LMIS), providing real-time access to data, enabling geospatial analysis, and facilitating transparent transactions. They go beyond the scope of holding land; they allow zoning decisions to accelerate investment approvals, optimize public land use, and even support climate resilience by promoting thoughtful city planning.

Why Land Banks Matter?

Across the world, countries are grappling with the challenge of managing vast swathes of underutilized, disputed, or idle land. Whether in rapidly urbanizing Asian economies, post-industrial European cities, or land-rich but resource-constrained regions in Latin America, the lack of a structured, transparent approach to land banking has long hindered infrastructure development, affordable housing, and industrial investment. Modern land banks backed by digital platforms are emerging as critical tools to convert dormant land assets into active levers of economic growth.

By centralizing land records, enabling real-time geospatial analysis, and integrating with regulatory workflows, Land Banks 2.0 provide clarity, reduce legal ambiguity, and speed up investment decisions. Governments can proactively allocate verified land parcels for public projects, commercial development, or climate-resilient urban planning. Investors, in turn, benefit from improved access, reduced risk, and faster approvals. Globally, the rise of intelligent land banks marks a pivotal shift toward smarter governance, inclusive growth, and sustainable land utilization.

CSM Tech's Contribution: From Religious Land to Regional Development

CSM Tech has pioneered the transformation of land governance in diverse contexts from religious trusts to government municipalities, through scalable digital solutions. In Odisha, India, the **Shree Jagannath Temple Administration (SJTA)** manages over 3,000 villages' worth of temple lands spread across 20 districts. Faced with fragmented records and encroachment, the SJTA partnered with CSM Tech to implement a web-GIS-based integrated land management information system under the Government of Odisha. The result: a transparent, citizen-facing land bank where users can view available plots,

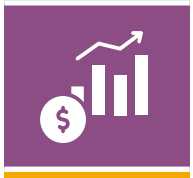
apply for allotments, and track applications online. This initiative not only enhanced revenue generation but also preserved historical land records and improved public trust.

Similarly, in Ethiopia, the **Urban Institutional and Infrastructure Development Program (UIIDP)**, scaled across 117 cities, demonstrated how structured digital land management could drive urban resilience and economic development.

CSM Tech developed this integrated solution that combines modules for Urban Planning, Land Management, Infrastructure Asset Management, and Procurement, all interconnected through a centralized platform. The land management module enabled accurate GIS mapping of parcels, dispute resolution, and smarter land use planning, laying a foundation for performance-based funding and transparent urban growth.

Impact: From Idle to Invested

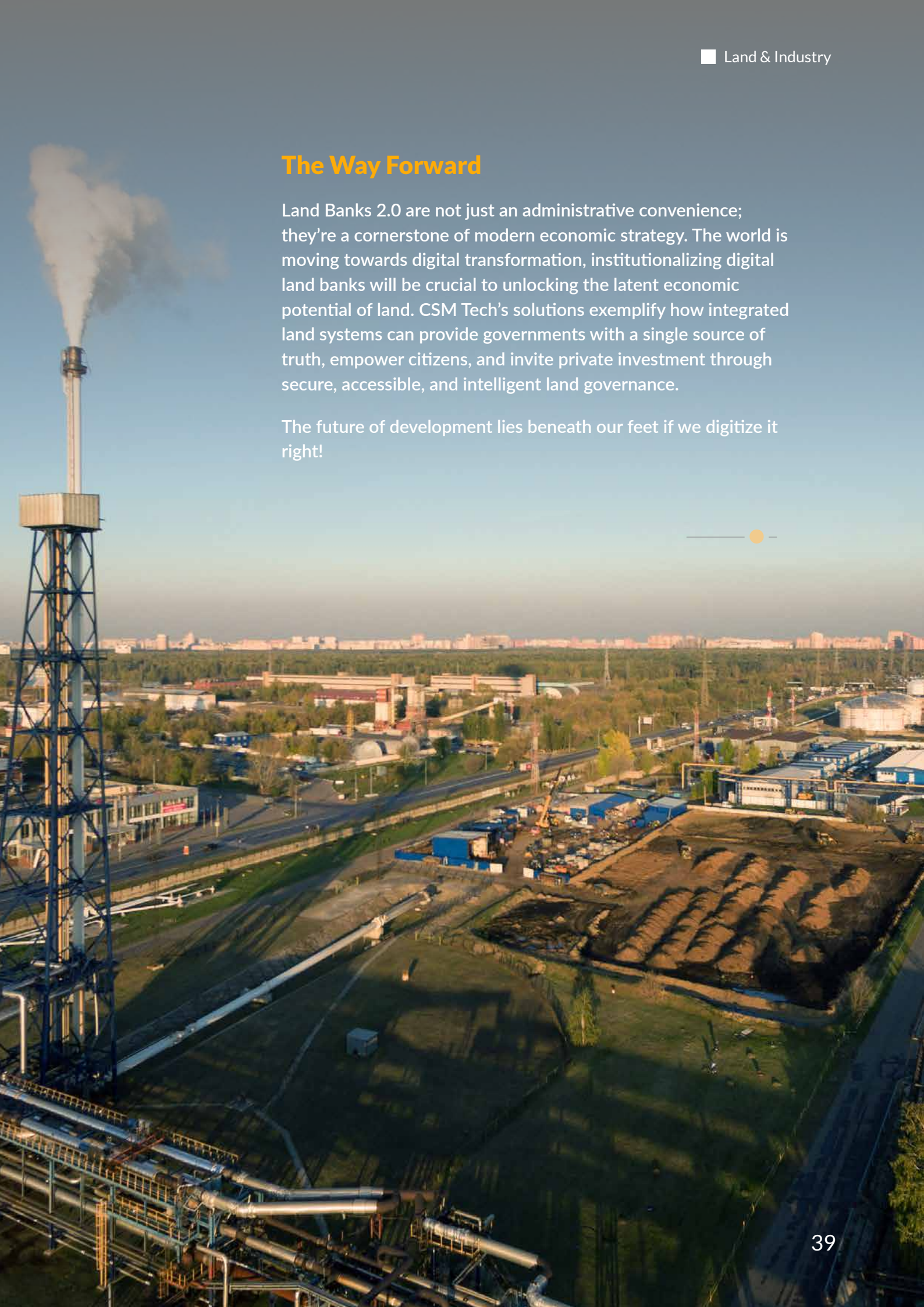
What defines Land Banks 2.0 is their capacity to shift land from liability to leverage. With systems like SJTA and UIIDP:

	Encroachment and disputes are drastically reduced through spatial verification.
	Revenue generation improves via data-backed leasing and sales.
	Citizen trust increases due to open access and transaction visibility.
	Institutional efficiency is boosted, allowing governments to make real-time, evidence-based decisions.
	Land becomes a magnet for investment, especially when bundled with infrastructure and service data.

The Way Forward

Land Banks 2.0 are not just an administrative convenience; they're a cornerstone of modern economic strategy. The world is moving towards digital transformation, institutionalizing digital land banks will be crucial to unlocking the latent economic potential of land. CSM Tech's solutions exemplify how integrated land systems can provide governments with a single source of truth, empower citizens, and invite private investment through secure, accessible, and intelligent land governance.

The future of development lies beneath our feet if we digitize it right!



CSM Technologies is a pioneering Tech Services organization that harnesses the power of existing and emerging technologies to provide solutions with tangible impact on efficiency of governance and quality of citizens' lives.

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