Navigating Digital Transformation:

A Multi-Level Perspective Analysis of New Zealand's Cadastral Reform and Lessons for South Africa

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Key words: e-Cadastre, Cadastral Reform, Multi-Level Perspective, Socio-technical Systems, South Africa, New Zealand, Transition Pathways

SUMMARY

The South African cadastre, a hybrid system with paper-based foundations and digitized components, faces significant challenges including tenure exclusivity, poor accessibility, and siloed land information. In response, the government aims to transition to a fully digital e-cadastre—a complex socio-technical endeavour that extends beyond technological adoption.

This research employs the Multi-Level Perspective (MLP) as its primary analytical framework to dissect the successful digital reform of New Zealand's cadastral system (Landonline). The MLP analyses systemic change through the dynamic interaction of three levels: the exogenous **Landscape** (macro-trends), the established **Regime** (dominant rules and technologies), and the innovative **Niche** (protected spaces for novelties).

The MLP analysis reveals that New Zealand's transition was catalysed by a powerful confluence of **landscape pressures**, primarily neoliberal political-economic reforms and tectonic deformation, which necessitated a new dynamic geodetic datum (NZGD2000). These pressures created a 'window of opportunity' which was exploited by **niche innovations** including the phased development of Landonline, the LandXML data standard, and a novel surveyor accreditation system. These innovations successfully **reconfigured the socio-technical cadastral regime**, resulting in a centralized, automated, and cost-recovery-funded system, albeit with emergent internal tensions such as the loss of institutional knowledge.

Building on this analysis, the paper concludes by translating these insights to the South African context. It identifies plausible **transition pathways** by contrasting the distinct landscape pressures and regime inertias of South Africa—including social tenure inclusion and institutional silos—with the New Zealand case. The primary contribution is a structured framework that delineates strategic leverage points for a context-sensitive and sustainable digital cadastral implementation in South Africa, offering valuable insights for global land administration reform discourse.

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1. Introduction

The global push for digital cadastres represents a profound socio-technical challenge, extending far beyond mere technological adoption. Successful reform requires the simultaneous transformation of legal frameworks, institutional practices, professional cultures, and data infrastructures. This complexity frequently leads to protracted reform cycles, as initiatives become mired in the intricate social and institutional dynamics of land administration systems (Whittal & Barry, 2006; Alexandru, 2020).

South Africa exemplifies this challenge. Its current cadastral system remains a hybrid of paper-based foundations and digitised components, reliant on the lodgement of physical or scanned diagrams in provincial Surveyor-General Offices (Fisher & Whittal, 2020). Despite a clear policy intent to develop an e-cadastre and digital registration system in line with international governance principles (Mostert, 2011; Hull & Whittal, 2014), modernisation efforts have been stalled. Key impediments include the misalignment of existing legislation with digital processes and a lack of consensus among the diverse actors in the reform process (Presidential Advisory Panel, 2019).

While international case studies of cadastral digitalisation offer valuable insights, few employ a robust socio-technical transition theory to extract *actionable and context-sensitive pathways* for reformers. This paper addresses this gap by posing the core research question: **What lessons from New Zealand's cadastral transition are applicable or require fundamental adaptation for the South African context?**

To answer this, the paper employs the **Multi-Level Perspective (MLP)** as its primary analytical framework. The MLP analysis of New Zealand's Landonline reform is compared with a diagnostic analysis of the South African cadastre. This comparative approach aims to move beyond simplistic technology transfer by diagnosing the unique structural challenges South Africa faces and proposing a strategic, phased transition pathway attuned to its specific socio-technical dynamics.

The paper is structured as follows: Section 3 outlines the MLP theoretical framework. Section 4 presents the MLP analysis of New Zealand's reform. Section 5 provides a diagnostic MLP analysis of the South African context, leading to a comparative synthesis in Section 6. Based on this diagnosis, Section 7 proposes a plausible transition pathway for South Africa, with final conclusions and recommendations presented in Section 8.

2. Theoretical Framework: The Multi-Level Perspective (MLP)

The Multi-Level Perspective (MLP) is an established framework for analysing long-term, systemic change within complex socio-technical systems (Geels, 2011). It conceptualises transitions as the outcome of dynamic interactions across three analytical levels (Figure 1):

- **The Socio-Technical Landscape:** The broad, exogenous context comprising slow-changing macro-trends in politics, economics, technology, and environmental factors. Landscapes create pressures and "windows of opportunity" for change but cannot be directly altered by regime actors.
- **The Socio-Technical Regime:** The dominant, stable configuration of institutions, regulations, professional practices, and technologies that govern a system. The regime embodies deep-seated rules and norms, generating significant inertia that resists change.
- **The Niche Innovation Level:** Protected spaces, such as pilot projects, research programmes, or local market niches, where radical novelties emerge. These niches act as 'incubation rooms' for alternatives, sheltered from the mainstream selection pressures of the dominant regime.

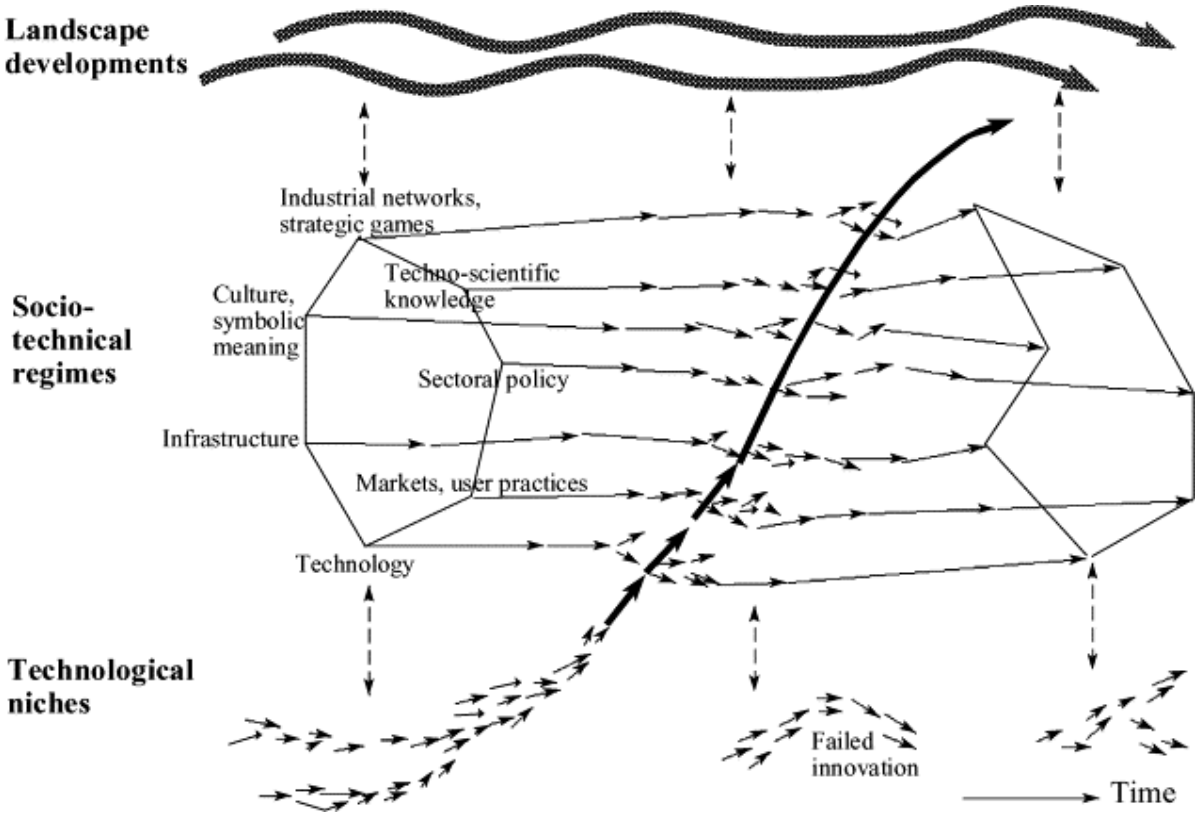

Figure 1: The MLP Framework Diagram (Reproduced from Geels (2002) with permission)

While the MLP has been productively applied to studies in energy, transport, and sustainability transitions (Markard & Truffer, 2008; Smith, Voß & Grin, 2010), its application to cadastral reform remains limited (Krigsholm, Riekkinen & Ståhle, 2020). This is a significant oversight, as the cadastre is a quintessential socio-technical system, integrating legal, organisational, technical, and social dimensions (Ottens & Stubkjær, 2007). A digital cadastral transition is not a mere IT upgrade; it is a profound reconfiguration that necessitates simultaneous changes in legislation, institutional workflows, professional skills, and data infrastructures. The MLP is thus an ideally suited framework to disentangle and analyse the multi-dimensional interactions that characterise such complex, long-term reforms. This paper employs the MLP to dissect the successful transition in New Zealand and to diagnose the structural dynamics at play in South Africa.

3. The New Zealand Transition: An MLP Analysis

This section analyses New Zealand's cadastral digitalisation through the MLP framework, distilling the socio-technical dynamics that enabled the successful Landonline reform.

3.1. The Pre-Landonline Regime: A Coherent but Inefficient Legacy

Prior to Landonline, New Zealand operated a **centralised, yet paper-based regime** characterised by stability but facing growing inefficiencies. The Department of Survey and Land Information (DOSLI, later LINZ) managed cadastral examination through a network of 12 district offices, holding a centralised archive of approximately 1.2 million physical plans (Haanen, Bevin & Sutherland, April 2002). This regime was a **coherent legacy**: it was unified under a single institution, governed by a consistent legal framework for Torrens title, and operated with standardised national procedures. However, it was dependent on manual workflows, physical storage, and analogue data, creating vulnerabilities to backlogs and rising operational costs. This coherent but inefficient structure provided a clear organisational target for modernisation.

3.2. Landscape Pressures: A Confluence of Drivers

Landscape pressures in the 1980s-90s created a powerful 'window of opportunity' for systemic change, driven by two primary forces:

1. **Political-Economic Reforms:** Sweeping neoliberal policies mandated public sector efficiency, cost-recovery ("user-pays"), and corporatisation. This created a top-down fiscal and ideological imperative to digitise land administration services (Hawkley, 1987; Hoogsteden, 1990).
2. **Environmental-Technical Imperative:** The static national geodetic datum (NZGD49) was degrading due to tectonic movement, with errors exposed by GNSS technology. This presented an undeniable *technical crisis* that a paper-based system could not solve, necessitating a new dynamic datum (NZGD2000) and a digital, coordinate-based cadastre (Grant & Blick, 1998; Blick & Donnelly, 2016).

These aligned pressures—one fiscal, one technical—acted upon a regime with the inherent capacity for a unified response.

3.3. Strategic Niche Management and Regime Reconfiguration

The state agency LINZ did not pursue a "big bang" replacement. Instead, it executed a **strategic process of niche-cumulation (**Table 1**)**:

- **Protected Pilots:** Early Land Information System (LIS) projects in Auckland served as protected spaces to test integrated digital workflows (Henderson, 1990).
- **Parallel Enabling Investments:** The development of NZGD2000 and a massive survey conversion project to create a survey-accurate digital cadastre were foundational niche innovations that made Landonline technically viable (Bevin, 2002; Rowe, 2003).
- **Governance & Procurement:** LINZ established a dedicated project office and outsourced development through partnerships that **prioritised expertise over lowest cost**, seconding its own staff to work with contractors as business experts (Bevin, 2002; Needham, 2002).

Table 1: Timeline of Key Events in New Zealand's cadastral reform

Year	Event / Milestone	Significance	Reference
1984–1990	Neoliberal reforms and public sector restructuring	Introduced New Public Management principles: cost-recovery, user-pays, performance measurement	(Hawkley, 1987; Robertson, 1989);
1987	Creation of Department of Survey and Land Information (DOSLI)	Consolidated land administration functions under a single department; precursor to LINZ	(Hawkley, 1987)
1988–1995	LIS Pilot Projects and CASE Tools (e.g., Knowledgeware)	Early attempts at computerised land information systems and database modelling	(Robertson, 1988; Pullar, 1989; Roundill, 1992)
1996	Creation of Land Information New Zealand (LINZ)	LINZ formed from DOSLI and other agencies; centralised digital land governance	(Bevin, 1999)
1997	Initiation of Landonline Programme	LINZ commenced a programme to automate the nation's survey and title systems through a single, integrated electronic system	(Spaziani, 2002)
1998	NZGD2000 project initiated	LINZ approved the development and establishment of a new geocentric datum to replace the static NZGD49 datum	(Blick & Rowe, 1997)
1999	Survey Conversion project and creation of the Survey-accurate Digital Cadastre (SDC)	The conversion of existing survey plans to update the DCDB with survey accurate data, thus creating the SDC	(Rowe, 2003)

Year	Event / Milestone	Significance	Reference
2002	Commencement of Cadastral Survey Act 2002	Paved the way for Cadastral Survey Datasets (CSD) allowing for a different approach to survey plans. The CSD defined what a surveyor creates and lodges, by including data and all of the aspects required to be submitted	LINZ, Personal communication, 2025
2002	Launch of Landonline (Survey Module)	Enabled electronic survey plan lodgement and introduced spatial validation	(Bevin, 2002)
2007	Cadastral Survey (Compulsory Lodgement of Digital Cadastral Survey Datasets) Order 2007	This made it compulsory to use Landonline for the creation and lodgement of cadastral survey datasets	LINZ, Personal communication, 2025

This managed process culminated in the **reconfiguration of the socio-technical regime** (Figure 2). Landonline replaced paper with digital data flows, district offices with centralised processing, and manual checking with automated validation and a new audit-based professional accreditation system. The regime was transformed from a decentralised, paper-based system into a centralised, digital, and cost-recovery funded service

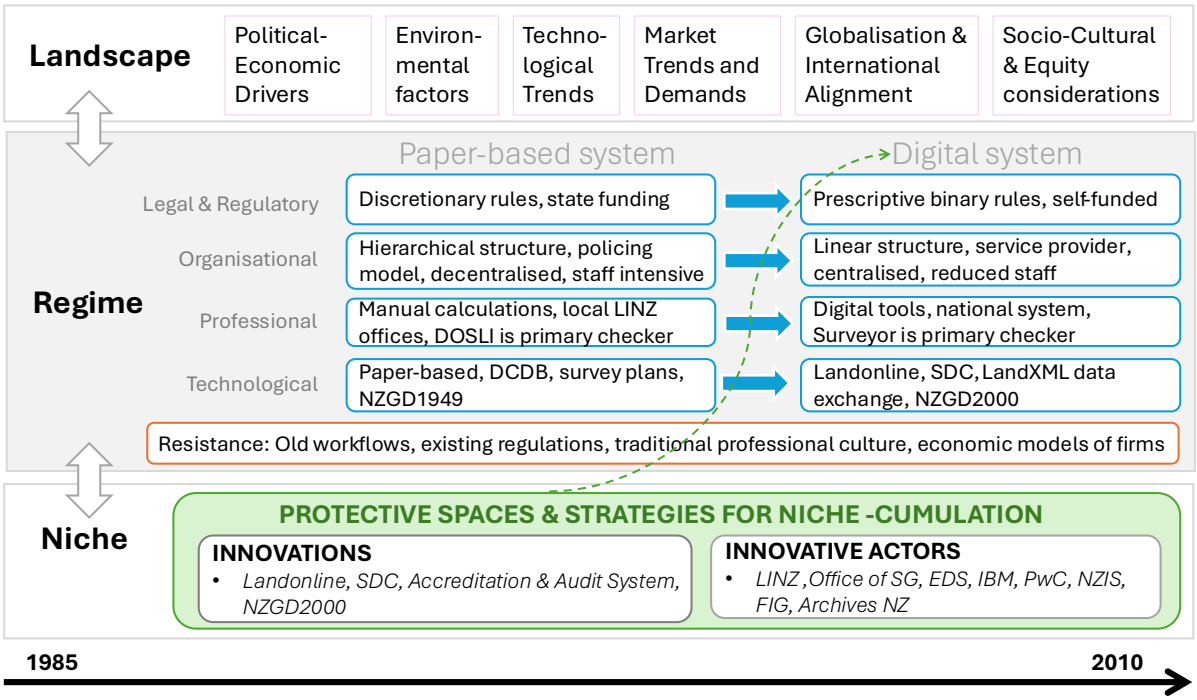

Figure 2: MLP Analysis of New Zealand's Cadastral Reform

4. The South African Context: A Diagnostic MLP Analysis

Applying the same MLP lens to the South African cadastre reveals a fundamentally different pre-transition context, characterised by structural fragmentation and a dual imperative for change (Table 2).

4.1. A Fragmented and Contested Regime

South Africa's cadastral system is not a coherent legacy but a fragmented and contested regime-in-transition. Its instability stems from three core characteristics:

- **Layered and Contradictory Legal Framework:** The system is governed by a *legislative palimpsest*. Foundational paper-based acts (the Land Survey Act of 1997, the Deeds Registries Act of 1937) coexist with, but are not replaced by, digital statutes like the Electronic Deeds Registration Systems Act 19 of 2019. This creates conflicting legal logics and uncertainty.
- **Institutional Silos:** Core cadastral functions are split across separate institutions: the Offices of the Surveyors-General (survey), the Deeds Registry (title), and the Chief Directorate: National Geospatial Information (mapping and control networks). This siloing prevents a unified operational or data strategy.
- **Pervasive Tenure Pluralism:** Unlike New Zealand's focus on a single tenure type, the South African regime must contend with the constitutional mandate to recognise and secure a complex spectrum of rights, including widespread social and customary tenures that the formal system was historically designed to exclude (Kingwill et al., 2017; Presidential Advisory Panel, 2019).

This regime is therefore defined by internal tensions between paper and digital laws, between separate institutions, and between its design purpose and its social mandate.

4.2. Landscape Pressures and a Fragmented Niche Landscape

The landscape pressures on South Africa are distinct in nature and effect:

- **Social-Legal Pressure:** The dominant driver is the constitutional imperative for equitable land reform and redress. This creates a powerful demand for a system that is not only efficient but also *inclusive and transformative*.
- **Digital Policy Pressure:** National strategies like the Draft Digital Government Policy Framework (DGPF) and the MyMzansi initiative pushing for "whole-of-government" digital integration and improved service delivery (DPSA, 2024; The Presidency, 2025).

In response to these pressures and the regime's service gaps, a **vibrant but fragmented niche landscape** has emerged organically:

- **Municipal and Private Solutions:** Metropolitan cities such as Cape Town and Johannesburg have developed advanced GIS, while private firms like 1map offer integrated platforms to municipalities, filling the void left by the national system (Humby, 2021; 1map, 2024).

- **Parallel State-Led Projects:** The national government has initiated strategic projects like the Cadastral Information System (CIS) Revamp and the Electronic Deeds Registration System (eDRS). However, these operate as parallel, uncoordinated initiatives rather than components of a single, unified reform programme.

Core Analytical Point: Unlike New Zealand, where aligned landscape pressures acted upon a coherent regime, South Africa's landscape pressures demand *transformative inclusion*, but act upon a regime structured for *fragmentation*. Consequently, the pressure for change does not produce a coherent response; it fragments further, manifesting as isolated innovations and projects that lack strategic alignment.

Table 2: Comparative Analysis of Pre-Transition Cadastral Regimes

Regime Dimension	New Zealand (Pre-Landonline, Paper-Based Regime)	South Africa (Current Hybrid Regime)	Core Implication for SA's Pathway
Legal-Regulatory Design	**Unified but Analogue:** A single, coherent legal framework (e.g., Land Transfer Act) designed for paper, with centralised authority. Clear but manual rules.	**Layered & Transitional:** Multiple Acts reflect a legislative palimpsest—a foundational paper-based layer (LSA, DRA) overlaid with digital amendments (EDRSA). This creates a dual, complex system where new digital logic conflicts with enduring paper-based legal primacy.	SA's pathway is legally more complex. It must navigate and reconcile a fragmented legal landscape, not just digitise a coherent one.
Organisational & Governance	**Decentralised but Unified**: 12 District Offices under a single institution (DOSLI/LINZ) with national standards. Core functions (deeds, survey, control networks) were integrated under one administrative roof	**Decentralised and Siloed:** 8 Provincial SGOs under the CSG, but core cadastral functions are split across separate institutions (Deeds Registry, National Mapping, Control Networks), each with independent workflows and mandates.	SA faces a compound challenge: overcoming operational decentralization and bridging deep institutional silos. Creating a unified governance structure is a prerequisite that NZ had already largely solved.
Professional Culture & Incentives	**Competent, Manual Craft:** Surveyors and state examiners operated in a high-trust, high-skill manual system. Change resistance came from pride in existing craft.	**Compliance-Focused, Bureaucratic:** Professional culture shaped by manual verification, risk aversion, and operating within systemic fragmentation and legacy constraints.	Both systems exhibit inertia from skilled practice. However, SA's culture is also shaped by systemic dysfunction, requiring a different change management approach.

Regime Dimension	New Zealand (Pre-Landonline, Paper-Based Regime)	South Africa (Current Hybrid Regime)	Core Implication for SA's Pathway
Core Technological Infrastructure	**Centralised Analogue Archive:** A single, complete national archive of ~1.2 million physical and microfilmed plans. Required a massive, dedicated "Survey Conversion Project" (1999-2003) to create a survey-accurate digital cadastre. A new geodetic datum (NZGD2000) also had to be developed.	**Substantial but Fragmented Digital Foundation**: Possesses key digital prerequisites NZ lacked: a modern geodetic datum (Hart94) and a national CORS network (TrigNet). It also has a comprehensive national cadastral GIS layer, created through decades of digitisation projects (e.g., Project HOPE, Project Miracle in the 1990s), which is continuously updated. However, this data is siloed across different departmental systems.	SA possesses major digital assets that NZ had to build from scratch. The core challenge is therefore not initial digitisation, but orchestration and integration. SA's pathway can leverage these existing foundations, focusing on unifying access, improving data models (e.g., LADM), and building a user-centric platform on top of this substantial data bedrock.
Treatment of Tenure Pluralism	**Separate but Defined:** Māori customary and freehold land (~5.6% of land area) was administered under separate, parallel legislation and courts (e.g., Māori Land Court). The mainstream Torrens system was designed for a single, homogeneous tenure model.	**Pervasive and Contested**: Complex social, informal, and customary tenures affect a majority of the population on a significant portion of land (communal areas ~13% of land, home to ~43% of population). These tenures exist in a state of legal ambiguity and contestation within the mainstream system's jurisdiction.	NZ's transition did not have to redefine the core legal object of its cadastre. SA's digital transition is inextricably a socio-legal reconfiguration. It must develop the system's capacity to recognize, record, and administer a spectrum of tenures it was historically designed to exclude.

5. Comparative Synthesis: Diagnosing the 'Double Transition'

The comparative MLP analysis reveals that New Zealand and South Africa are not at different points on the same transition pathway but are navigating fundamentally different types of socio-technical change. This synthesis distils three critical findings that define the unique challenge for South Africa.

5.1. Divergent Regime Starting Points: Coherence vs. Fragmentation

The pre-transition conditions in each country established vastly different baselines for reform. New Zealand's regime was a 'coherent legacy'—a unified, paper-based system operating under a single institution with a consistent legal framework for a dominant tenure type. Its primary weakness was technological inefficiency. South Africa's regime is a fragmented and contested legacy—a hybrid system defined by layered laws, institutional silos, and a fundamental

disconnect from the tenure realities of a large portion of its population. Its weakness is systemic incoherence.

5.2. Misaligned Landscape-Regime Dynamics

The interaction between landscape pressures and regime structure determines the feasibility of a coordinated response. In New Zealand, political-economic and environmental-technical pressures were *functionally aligned* with the regime's capacity; they demanded efficiency and technical modernisation from a system capable of a unified, state-led response. In South Africa, social-legal and digital policy pressures are *structurally misaligned*; they demand transformative inclusion and integration from a regime whose architecture is designed for separation and exclusion. This misalignment explains the pattern of parallel, uncoordinated initiatives instead of a concerted national programme of reform.

5.3. The Imperative of a "Double Transition"

These findings culminate in the central argument of this paper: South Africa is not facing a singular digital modernisation challenge akin to New Zealand's. It should execute a '**Double Transition'**:

- **An Integration Transition:** South Africa should *first achieve the institutional, legal, and data coherence* that New Zealand already possessed. This involves bridging silos, rationalising legislation, and unifying disparate digital assets into a single authoritative foundation.
- **A Transformative Digital Transition:** Concurrently, and intertwined with the first, it should *digitise its processes and transform its social purpose* to recognise and secure a diverse spectrum of tenures, as mandated by the Constitution of the Republic of South Africa 1996.

This double imperative represents a uniquely complex socio-technical endeavour. It requires building a new, inclusive system while the old, fragmented one remains operational, and doing so within a governance environment that currently diffuses rather than concentrates reform energy.

6. A Strategic Transition Pathway for South Africa

The diagnosis of a "Double Transition" dictates that a linear, technology-first approach modelled on Landonline is not feasible for South Africa. Instead, a successful pathway must first correct the foundational governance and strategic misalignments. This section proposes a three-phase pathway, informed by the MLP, that prioritises strategic orchestration over immediate system building.

6.1. Guiding Principles

The pathway is guided by two principles derived from the comparative analysis:

- **Orchestrate, Then Build:** Phase 1 should be dedicated to creating the strategic coherence—the "LINZ moment"—that New Zealand possessed at the outset.
- **Design for Inclusion from the Start:** The technical and legal architecture should be built to recognise tenure pluralism, avoiding the need for costly and complex retrofitting.

6.2. A Three-Phase Transition Pathway

The proposed pathway structures the 'Double Transition' into sequential, manageable objectives.

Table 3: A Strategic Transition Pathway for South Africa

Phase	Core Objective	Key Strategic Actions	MLP Rationale
Phase 1: Foundation & Alignment (3-5 yrs)	Establish governance coherence & a unified vision.	**1. Establish a high-level Digital Land Steering Committee** with a mandate from The Presidency to align CIS Revamp, eDRS, MyMzansi, and NGI. **2. Develop & adopt a tenure-inclusive South African LADM Profile** as the mandatory national data standard. **3. Launch strategic, learning-oriented pilot projects** in select provinces to test integrated workflows and the LADM.	Creates a regime-level governance structure capable of a unified response. Establishes a protective space for strategic learning and fosters niche alignment.
Phase 2: Controlled Integration & Capacity Building (4-6 yrs)	Integrate core systems & shift professional culture.	**1. Develop the "National Cadastral Data Hub"** – a cloud-based platform that ingests and harmonises data from SGOs, Deeds, and CD: NGI as a single virtual source. **2. Implement phased integration of provincial SGO workflows** into a unified, cloud-based examination system. **3. Reform professional incentives** via a digital surveyor accreditation system and upskill officials as Property Rights Analysts.	Reconfigures the technical regime by integrating fragmented assets. Reconfigures the professional regime by incentivising digital quality. Builds on the foundation of Phase 1.
Phase 3: National Scaling & Ecosystem Innovation (Ongoing)	Achieve digital-by-default operation & foster innovation.	**1. Mandate digital submission**, decommissioning parallel paper-based processes. **2. Open secure APIs of the National Data Hub** to certified third parties (tech firms, municipalities). **3. Institutionalise adaptive governance** through the permanent Steering Committee.	Completes the regime reconfiguration. Transforms the system into open innovation infrastructure, leveraging the aligned landscape of market and developer demand.

6.3. Strategic Implications

This pathway implies a significant shift in current practice:

- **Procurement Reform:** Partner selection for Phase 2 should prioritise *proven socio-technical integration expertise* over lowest-cost IT bidding, learning from New Zealand's model.
- **Strategic Niche Management:** The State should actively learn from and integrate successful municipal and private innovations (like 1map), treating them as valuable prototypes rather than competitors.
- **The Primacy of Governance:** The entire pathway hinges on the success of Phase 1. Without the cross-departmental Steering Committee and the LADM standard, subsequent technical investments risk reinforcing existing silos.

In conclusion, this pathway recognises that South Africa's digital transition is foremost a strategic governance challenge. By first building the capacity for coherent action, South Africa can then systematically harness its considerable innovative energy and digital assets to navigate the "Double Transition" and build a legitimate, inclusive, and efficient cadastre.

7. Conclusion and Recommendations

This paper employed the Multi-Level Perspective to analyse New Zealand's Landonline reform and diagnose the South African cadastral context. The comparative analysis reveals that South Africa is not facing a singular modernisation challenge but a '**Double Transition'**: it must first achieve the institutional and data coherence that New Zealand already possessed, while simultaneously undertaking a digital and socio-legal transformation for tenure inclusion.

The primary lesson from New Zealand is not its specific technology, but its strategic process of state-led niche management under coherent governance. For South Africa, the critical adaptation is the '**Integration First' principle**—prioritising strategic alignment before large-scale technical builds.

Based on this analysis, the paper offers three core recommendations:

1. **Establish a Cross-Departmental Digital Land Steering Committee** with a mandate from The Presidency to align all digital land administration initiatives (CIS Revamp, eDRS, MyMzansi).
2. **Mandate the Development of a Tenure-Inclusive South African LADM Profile** as the foundational national data standard to ensure the future system is designed for inclusion from the outset.
3. **Adopt Strategic Niche Management and Procurement Reform.** Actively learn from existing municipal and private innovations, and reform procurement to prioritise partners with proven socio-technical integration expertise over lowest-cost bids.

For South Africa, the journey to a digital cadastre is fundamentally a journey toward better governance and spatial justice. By applying the contextual lessons of the MLP framework,

South Africa can navigate its unique 'Double Transition' to build a system that is not only digital, but also legitimate, inclusive, and a foundation for equitable development that is responsive to its social mandate towards all citizens.

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BIOGRAPHICAL NOTES

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Melissa holds a BSc in Geomatics from the University of Cape Town (2012) and a Postgraduate Diploma in Poverty, Land and Agrarian Studies (PLAAS, 2019). She is currently completing an MPhil in Engineering, specialising in Geomatics. Since 2013, she has worked as a Professional Surveyor within the National Geomatics Management Services (NGMS) branch of the Department of Agriculture, Land Reform and Rural Development. Her career has spanned key divisions, including the Surveyor-General's Office and the Chief Directorate: National Geospatial Information, giving her comprehensive insight into South Africa's cadastral system. Her current role involves overseeing the processing and dissemination of GNSS data for TrigNet, South Africa's national CORS network. This research forms a core part of her MPhil studies and is directly informed by her professional experience with the technological and institutional challenges of cadastral modernisation.Chief Directorate: National Geospatial Information

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Jennifer WHITTAL

Jennifer Whittal is a Professor in the Geomatics Division at the University of Cape Town. She obtained a B.Sc. (Surveying) and a M.Sc. (Engineering) specializing in global positioning systems from the University of Cape Town. In 2008, Jenny obtained her Ph.D from the University of Calgary applying critical realism, systems theory and mixed methods to a case of fiscal cadastral systems reform. She is a Professional Land Surveyor and lectures advanced surveying and land law. Research interests are land tenure and cadastral systems with specific interest in sustainable development and resilience in land holding for the poor, historical property holding, and cadastral issues in the coastal zone.

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