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URBAN LAND AND PROPERTY RECORD SYSTEMS IN INDIA: THE CASE AND AGENDA FOR REFORM

Policy Brief



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About this Policy Brief

It is widely acknowledged that land and property record systems in India merit attention and have the potential to enable ease of doing business, infrastructure development and security of tenure. However, while improvements in land and property record systems in rural areas have drawn significant attention over the years, improvements in urban land and property record systems have not received the same emphasis for a variety of reasons. This policy brief dwells on the case for reforming the country's urban land and property record systems, takes stock of the current status of the same and core gaps therein, and proposes a way forward.

The Importance of Urban Land and Property Records

- Tens of millions of urban Indians invest annually in land and property.¹ These are often the single largest investments they make in their lifetimes.² However, the process of such investment-making is generally one ridden with anxiety, primarily on account of uncertainties around titles to land, adherence to permitted land use, status of regulatory permissions, timely delivery of built homes and timely resolutions of any disputes that may arise. Improved urban land and property record systems can ensure legal recognition and protection of citizens' interests, address anxieties associated with the transaction process, and reduce land-related disputes³ in the long run.
- Availability of reasonably complete, current and authoritative information on property rights is critical to boosting investment prospects and economic activity (Hilhorst & Meunier, 2015). The World Bank's Doing Business reports, which assessed and compared the ease of doing business (EODB) in various countries between 2014 and 2020, included 'registering property' as one of its ten key assessment parameters.

While India's overall rank had risen from 142 (among 189 nations) in 2014 to 63 (among 190 nations) by 2020, the country's performance in 'registering property' (rank 154) remained weak. The Department for Promotion of Industry and Internal Trade (DPIIT), Government of India (GoI) continues to suggest reforms for land administration and transfer of land and property as part of its Business Reforms Action Plan (BRAP) 2020.

- Improved urban land and property record systems promise much for real estate developers and financial institutions. The Confederation of Real Estate Developers' Association of India (CREDAI) has spoken of the importance of land records digitisation for mitigating the 'lengthy due diligence time required by... developers, investors, and buyers' (CREDAI & Jones Lang LaSalle [JLL], 2018). The NITI Aayog has made a case for addressing 'existing gaps in land records' to 'improve the assessment of creditworthiness for households and informal businesses' (NITI Aayog, 2019).

- In urban areas, proper land and property records are crucial for planning, zoning regulations and infrastructure development. Indian cities have high population densities coexisting with suboptimal utilisation of land (Ministry of Housing and Urban Affairs [MoHUA], 2016), and these land use inefficiencies are often a product of fragmented and poorly recorded ownership of urban land (NITI Aayog, 2021). Planning of spatial components cannot be done without good maps with clarity of land titles, ownership and tenures (NITI Aayog, 2021).
- Taxes on land and property are an important source of revenue for state governments and urban local bodies (ULBs). In 2021–22, stamp duty and registration charges in Uttar Pradesh (UP), Maharashtra and Gujarat accounted for approximately 14 per cent, 13 per cent and 10 per cent, respectively, of the state’s total own tax revenue. In the same year, the total stamp duty and registration charges collected in the country amounted to Rs 190,000 crore (Indian Institute for Human Settlements [IIHS] analysis, 2023).

In 2019–20, about Rs 20,000 crore was collected by Indian ULBs as property tax, which was around 25–36 per cent of the ULBs’ own revenue (Indian Council for Research on International Economic Relations [ICRIER], 2019; MoHUA, 2021). Improved and updated systems of land and property information can raise revenue for both state and city governments by ensuring all properties are covered (i.e., increasing the tax base) and improving the reliability of information systems.

- The impact of weak documentation of property rights is disproportionately felt by the urban poor. Lack of formal evidence of property rights prevents them from accessing credit for making and renovating properties, and even government schemes⁴. Housing prices can be made more affordable by improved transparency in the real estate sector, including ‘accuracy of land registry records’ (Gupta, Agnihotri, & George, 2023). Further, improved urban land and property record systems can improve the quality of master planning and its implementation, realise infrastructure at a faster pace, and improve public finances—all of which can be instrumental in improving living and working conditions for the urban poor.

Current Gaps in Urban Records and Issues

- The status of land and property records in urban India varies from one state/city to another in terms of comprehensiveness, updation status, institutional responsibility and digitisation.
- Four broad types of urban land and property records exist in Indian cities. These are broadly distinguished based on their format, custodian agency and status. The typologies are not exclusive, and several cities have two or more types of records co-existing at the same time.
 - **Absent/Un-updated Record of Rights (RORs):** In some states, ROR⁵ is absent or not updated after areas are declared urbanised since Revenue Departments⁶, who act as custodians for rural land records, view the urban as a municipal or development authority concern. For example, the Revenue Department of the Government of National Capital Territory of Delhi (GNCTD) ceases to maintain land records for villages once they are formally brought into the urban fold. A similar practice is followed in states such as Karnataka, Rajasthan and UP.⁷
 - **Urban ROR in Rural Format:** The land record system does not distinguish between rural and urban areas in states such Chhattisgarh, Haryana, Himachal Pradesh (HP), Odisha and West Bengal. In these states, updated land records include urban areas. However, the record formats are similar for rural and urban areas, and struggle to capture characteristic urban processes. For instance, urban land is often highly partitioned and has a specific use of land prescribed by the master plan. The ROR does not reflect this reality and continues to denote a large land parcel with multiple owners, without spatial demarcation of individual plots or any details of assigned land use.
 - **Urban ROR in Urban Format:** States such as Gujarat and Maharashtra have a separate format for recording land and property rights in urban areas. Both Gujarat and Maharashtra use property cards for creating and maintaining separate urban land and property records for cities and inhabited areas. The property cards are maintained by the City Survey Division, a separate unit of the state Revenue Department. Tamil Nadu (TN) also has a separate set of land records for urban areas, known as Town Survey Land Records. Karnataka has attempted something similar through its Urban Property Ownership Records (UPOR) initiative.
 - **Alternate Record Formats:** Apart from the Revenue Department, there are multiple other institutions which maintain land and property records in urban areas. These include urban development authorities, industrial development authorities and housing boards, which commonly acquire and develop land parcels before allotting them and maintain a record of the same. These records, notably, are limited to formal, institutionalised supply of land or property.

Further, ULBs collect property tax from land and property owners in areas under their jurisdiction and maintain a property register for the same. Built-up properties are often better covered in property tax records. In addition, the Department of Stamps and Registration maintains a record of all registered transaction deeds. In the absence of updated RORs, registered conveyance deeds or municipal property tax records are often considered proof of ownership, despite insufficient statutory backing.⁸

Importantly, these databases often exist in silos and do not connect with each other. For example, records maintained by development authorities are not linked to registration or to property tax records. Similarly, municipal property tax records are not linked to registration records. This results in increased complexity and duplicate processes for citizens.

- Legacy gaps in comprehensiveness and updation status persist across the four types of urban records. Most commonly, details of built-up property, especially apartments, and encumbrances (mortgages, development permissions, jurisdiction) are often missed. Further, revenue records are not updated following registration of a transaction, inheritance, subdivision of a land parcel into smaller parts, and land acquisition or land development.

Thus, records are often absent or not updated in some states and are available in ‘rural’ formats that do not adequately capture urban processes in others. Further, even when records are available in formats more consistent with urban realities and with other agencies, there are missed opportunities in terms of how they can be aggregated to fashion a comprehensive, accurate and regularly updated urban land and property records system.

Examples of gaps in urban land and property records⁹

जमाबंदी पंजी प्रति						
भाग वर्तमान : 2	पृष्ठ संख्या : 1	जमाबंदी संख्या : 211	कंप्यूटरीकृत जमाबंदी संख्या : 212140000195174			
जिला का नाम : Patna	अनुमंडल नाम : Patna Sadar	अंचल का नाम : Patna Sadar	हलका का नाम : Karikarbag			
मौजा का नाम : हनुमान नगर	होलिंग संख्या : N/A	टोपी संख्या : 0	धाना नंबर : 4/8			
MURMU MAHTO , पिता/बाप-अव् -SADHU MAHTO, जाति- N/A						
खता सं०	प्लॉट/खेसरा सं०	रकबा	चौहद्दी	परिवर्तन के लिए प्राधिकार	लगान	सेस
19	2	0 ए 0 डि 0 हे	पूरः उत्तरः दक्षिणः पूर्वः	N/A	10	0
कुल परिमाण		0 ए 0 डि 0 हे				
अंतिम लगान का विवरण						
तारीख	प्राप्ति पत्र सं०	साल से	साल तक	सागत बकाया		
उपरोक्त जमाबंदी के विरुद्ध दाखिल झारिज का विवरण				Mutation Cases Not Found !!		

Figure 1: ROR notes ownership, but does not note area, location, land use or built-up details



Figure 2: No ROR or subdivision for abadi areas in urban jurisdictions

Figure 3: Subdivision of land parcels not updated in cadastral map or ROR

Government of Maharashtra Property Card					
Village/peth : akurdi		Taluka / C.T.S. Office : nagar bhumapan adhikari, pimpri-chinchwad			District : pune
CTS No	Sheet Number	Plot Number	Area Sq.Mt.	Tenure	Assessment
1007	112		448.00	a	binohiti sara dar prativashi ru 1115.50 sa. si. s. no. 1008, 1009, 1010, 1011 v 1012 hamchi mudat di. 13/4/82 to 31/7/91 akhar.
Easements :					
Name of the Holder : h varsh : 1980 pimpri chinchwad nagar vikas pradhikaran.					
Lessee :					
Other Encumbrances/Rights :					
Other Remarks :					
Date	Transaction		Vol.No.	New Holder (H, Lessee(L) or Encumbrance(E))	Attestation
01/01/1990	ms. Districthi an pune yanchikadi karmak n. a. / s. r/9/h/403/82 di. 13/4/82 the binohiti adashanar bhaki Lessee mhanon nary dakhal samil si. s. no. 1008 to 1012.			chairman, phandly ko. cp housing society li. pune.	subi- 25/11/87 ji. ni. bh. a. tarha n. bh. a. pin. chin.
11/06/1987					subi- 25/11/87 ji. ni. bh. a. tarha n. bh. a. pin. chin.

Figure 4: Property card mentions the name of the cooperative housing society and not the names of individual members for each plot within the society. No mention of individual plot numbers or plot sizes.

- Cumulatively, these gaps translate into a situation where citizens, the city economy, and public finances are adversely impacted. Citizens find it difficult to prove ownership in case of dispute or adverse possession, incur high transaction costs and sometimes turn to middlemen for pre-purchase due diligence around permissible land use, property ownership and encumbrances, and often live with uncertainty around these factors even after spending on due diligence.

With businesses assailed by similar uncertainties, and given informational inefficiencies in the property market, the city's potential to draw investment is muffled. Businesses end up spending a lot of time and resources on finding a suitable property with reliable documentation that fits their needs. At a larger level, the lack of accurate real-time information prevents informed policymaking, development plans which are grounded and efficient implementation of projects—all of which impact the average citizen, particularly the urban poor, as well as institutional performance and efficiencies.

Rural Experience and Implications for the Urban

- Land records in rural areas have been updated and modernised to a large extent. This is a result of concerted attention from the GoI for over three decades, beginning with the Computerisation of Land Records (CLR) scheme introduced in 1987. Presently, the Digital India Land Records Modernisation Programme (DILRMP), a central sector scheme, aims to digitise land records and procedures with the objective of creating an accurate, effective and transparent land record management system.
- Under DILRMP,¹⁰ about 95 per cent of Indian villages have computerised their land records. In almost all these villages, citizens can access the ROR through a range of channels such as citizen service centers, kiosks and online platforms. Further, over 75 per cent cadastral maps¹¹ have been digitised, and nearly two-thirds of the ROR have been linked to spatial records. This reflects noteworthy progress on significant milestones, though issues remain around the accuracy of digitised records, time lag in updation of online records, and time taken for mutation and other processes.
- The primary focus of the DILRMP and Revenue Departments (which maintain land records) in most states is on agricultural areas. Consequently, the land records in urban areas are not as regularly updated, accurate, free of errors or easily accessible. This follows a colonial tradition that prioritised agricultural regions for revenue generation and did not focus enough on documenting non-agricultural areas (IIHS, 2017).
- The DILRMP guidelines do not explicitly distinguish between rural and urban areas. States such as Bihar, Haryana, Punjab and West Bengal initially used DILRMP resources for computerising both rural and urban land records. It was only in a 2016 circular that the Department of Land Resources (DOLR), Ministry of Rural Development (MoRD), GoI clarified that DILRMP focuses on 'land' and does not extend to 'property'. This policy distinction between 'land' and 'property' has meant that states which may be interested in improving their urban property records do not have access to financial support for this under DILRMP.

Potential Way Forward

- There are several challenges in improving urban land and property record systems, including their regular and real-time updating. These include absence of reliable legacy records, high frequency of transactions, processes such as change of land use and building permissions which are unique to the urban, jurisdictional issues in terms of multiple authorities and resultant data silos, inadequacy of current record formats, need for spatial accuracy, and financial considerations (IIHS, 2017)

- In view of the above, the following presents a way forward:

- **Creating an Urban ROR Format:** The vision and scope of an accurate, updated and relevant urban land and property record system can be best defined by a new ROR format. The long-term goal is that a citizen should be able to view and download a set of accurate, comprehensive and real-time records on a service-fee basis, with revenue being shared by the respective data-sharing authorities.

The format should include basic details on ownership, possession, classification, extent and encumbrances associated with the particular property. These include name of the owner, name of the lessee, assigned use of land/property, area (with specification of whether carpet area or super built-up area and non-built-up area), floor area ratio utilised, property tax details, mortgages, court cases and other details as relevant. The new format must include a map indicating the location and geospatial coordinates of the property. Gujarat and Maharashtra have created systems to document apartments within the same group housing society, and these can be adapted.

- **Integration of Existing Databases, using Unique Property IDs:** There is much existing information available with various agencies, which needs to be digitised, cleaned and standardised before being interlinked with other datasets for the same piece of property. Borrowing from the experience of the DILRMP, a unique property ID may be appropriate to consider. Most ULBs already use a property numbering system, and these can be adapted for the purpose of the unique property ID. This interlinking of databases can also be carried out through GIS, using property tax records as a base.
- **Survey Methodology:** Some states may choose to go for a fresh survey to demarcate urban properties and determine respective owners. DILRMP has not had a successful experience with resurveys at places where legacy land records were already in existence (Goswami et al., 2021)

Meanwhile, the Survey of Villages Abadi and Mapping with Improved Technology in Village Areas (SVAMITVA) scheme, another central sector scheme, offers a successful example of drone-based surveys in areas where land records either did not exist or were not useful. Lessons can be drawn from the DILRMP and SVAMITVA initiatives to arrive at a survey methodology which is cognisant of their respective learnings. Sharing of good practices and technology transfer among states may help optimise timelines.

- **Institutional Framework for Implementation:** Each state government needs to arrive at an institutional framework that is able to respond to its current challenges of maintaining urban land and property records. Possible options are: assigning the role to the Revenue Department itself, with or without a new wing specifically for urban

records; continuing the current arrangement with different authorities responsible for their own jurisdictions but with interconnected databases; or, creating a de novo institution for the purpose. The choice will be dictated by the inter-institutional dynamics and priorities in the state, as well as the selected methodology.

- **Legislative and Policy Changes:** States and cities will need to arrive at clear policy recommendations and protocols to resolve any discrepancies that appear in the databases. This will need to be supported by a quasi-judicial process of dispute resolution and an appeals process. The updated records thus being created also need to be assigned legal sanctity equivalent to the ROR.
- **Creating and Maintaining an Integrated System:** Due to the fragmented nature of urban areas (in terms of institutional jurisdiction), it is likely that different authorities will continue to play their respective roles in acquiring, developing, disposing, managing, and administering land and property. An integrated system would link the processes in a manner that each institution shares data with others and the public at large on a real-time basis and is an equal stakeholder in the success of the initiative. For example, the Department of Stamps and Registration should be able to access a No Objection Certificate (NOC) granted by the development authority for a proposed property transaction. Similarly, when the municipal boundary expands, prior records maintained by the Revenue Department and planning authorities should be accessible to ULBs.

Institutional Roles

- Coordinated action between central, state and local government agencies would be critical to moving the needle.

Gol could provide the necessary technical and financial support, as it has done with the DILRMP, and bring in important lessons with respect to technology upgradation for web-based interconnected databases, faster survey methodologies, geospatial data sharing, and on aspects such as use of unique property IDs and automatic mutation. ULBs and other local agencies, especially ones with extensive property inventory, tax records and digitised maps, could offer base data layers.

However, perhaps the most critical role will be played by state governments, given the inter-state variations in legal, political, social and historical contexts of land governance and the consequent need for crafting solutions that are cognisant of the variations in tenure, land-based conflicts and institutional arrangements, and harmonise databases and efforts of multiple institutional actors holding different pieces of data.

- In India, the private sector's role in managing land information systems has traditionally been limited to execution of specific services,¹² with governments retaining a supervisory and quasi-judicial role. However, with liberalisation of the geospatial sector under the National Geospatial Policy (2022) and democratisation of related datasets, the private

sector can now be expected to play a much stronger role in leveraging emerging technologies, including machine learning, artificial intelligence and blockchain. Private entrepreneurs can play a role in building upon the existing and proposed land information systems, and adding value to them while also generating revenue for the state. Some of these have already started emerging in the property technology, or 'proptech', sector.¹³

References

- Banerjee, B. (2022). Legal land tenure programmes: Security and precarity of the poor in Urban India. *International Journal of Urban Sustainable Development*, 14(1), 398-402.
DOI: [10.1080/19463138.2022.2111434](https://doi.org/10.1080/19463138.2022.2111434)
- Confederation of Real Estate Developers' Associations of India & Jones Lang LaSalle. (2018). *Traversing through the epic, predicting the curve*. CREDAI Conclave 2018: Real Estate 2.0.
<https://credai.org/console/public/upload/58e25067e2622374582c4f37ff37a511.pdf>
- Daksh. (2016). *Access to justice survey, 2016*. <https://dakshindia.org/wp-content/uploads/2016/05/Daksh-access-to-justice-survey.pdf>
- Goswami, A., Mitra, S., Jha, D., Lushington, K., & Sasidharan, S. (2021). *Land records modernisation in India: An institutional, legal & policy review*. Indian Institute for Human Settlements.
<https://doi.org/10.24943/9788195489305>
- Gupta, S., Agnihotri, N., & George, A. (2023). *House prices in India: How high, and for how long?* Centre for Social and Economic Progress Working Paper 62. https://csep.org/wp-content/uploads/2023/10/House-Prices-in-India_M.pdf
- Hilhorst, T., & Meunier, F. (Eds.). (2015). *How innovations in land administration reform improve on doing business: Cases from Lithuania, the Republic of Korea, Rwanda and the United Kingdom*. World Bank.
- Indian Council for Research on International Economic Relations. (2019). *Finances of municipal corporations in metropolitan cities of India: A study prepared for the Fifteenth Finance Commission*.
https://fincomindia.nic.in/writereaddata/html_en_files/fincom15/StudyReports/Finances%20of%20Municipal%20Corporations%20in%20Metropolitan%20cities%20of%20India.pdf
- Indian Institute for Human Settlements. (2017). *Land records modernisation: Urban and peri-urban areas* [Policy brief]. <https://iihs.co.in/knowledge-gateway/land-records-modernisation-urban-and-peri-urban-areas/>
- Ministry of Housing and Urban Affairs. (2016). *Habitat III national report - India*. <https://smartnet.niua.org/sites/default/files/resources/1560.pdf>
- Ministry of Housing and Urban Affairs. (2021). *A toolkit for property tax reforms - Volume 1*. https://www.janaagraha.org/files/Property_Tax_Reforms_Toolkit.pdf
- NITI Aayog. (2019). *Strategy for new India @75*. https://www.niti.gov.in/sites/default/files/2019-01/Strategy_for_New_India_2.pdf
- NITI Aayog. (2021). *Reforms on urban planning capacity in India*. <https://www.niti.gov.in/sites/default/files/2021-09/UrbanPlanningCapacity-in-India-16092021.pdf>
- Wadhwa, P. (2023, July 4). *How does India's \$11.1 trillion household savings into equities stack up*. Business Standard. https://www.business-standard.com/markets/news/how-does-india-s-11-1-trillion-household-savings-into-equities-stack-up-123070400187_1.html
- Wahi, N. (2019). *Understanding land conflict in India and suggestions for reform*. Centre for Policy Research. <https://cprindia.org/understanding-land-conflict-in-india-and-suggestions/>

Endnotes

- ¹ While no firm data is available on the annual number of urban land and property transactions that take place in India, these could be in the tens of millions. In 2021-22, eight states (Delhi, Gujarat, Haryana, Karnataka, Maharashtra, Tamil Nadu, Telangana and Uttar Pradesh) alone saw over 12 million registrations, and there are indications from Karnataka and Telangana that at least 60 per cent of these were in urban locations. Extrapolating from the 70 per cent share of these eight states in the stamp duty and registration charges collected nationwide, and assuming that the balance of registrations in the remaining states is largely rural (say, 70 per cent), the number of urban land and property transactions in the country would be presently of the order of about 13-14 million annually. Data from select markets suggests such transactions are projected to grow at about 8-10 per cent in the coming years.
- ² Real estate accounts for about 50 per cent of the USD 11 trillion of assets estimated to be held by Indian households in March 2023 (Wadhwa, 2023). A slightly older dataset, the All India Debt and Investment Survey (AIDIS) 2019, puts the share of land and buildings in total assets higher in both rural (about 91 per cent) and urban (about 87 per cent) areas.
- ³ Land and property disputes account for 60-70 per cent of all civil litigation in the country (Daksh, 2016) and a quarter of all cases decided by the Supreme Court of India (Wahi, 2019).
- ⁴ For example, in the Pradhan Mantri Awas Yojana (PMAY - Urban), a centrally sponsored scheme targeted at affordable housing for economically weaker sections, the most popular component is Beneficiary-led Construction (BLC). Under BLC, landowning beneficiaries are able to access subsidies only when they have formal evidence of property rights. See Banerjee (2022) for experiences from Madhya Pradesh.
- ⁵ A Record of Rights (ROR) is a document which, in practice, denotes ownership of a parcel of land. Known as *jamabandi-nakal*, *pahani*, Record of Tenancy and Crops (RTC), *khatauni*, *parcha*, *patta* and Village Form 7/12 in various states, the ROR comprises 12-13 columns to record details associated with a land parcel such as ownership, possession, the extent of the landholding, the use or type of land, and any encumbrances associated with the land parcel. Textual records are kept up to date through a process called mutation, which incorporates any changes in the ownership or possession of land.
- ⁶ Revenue departments (at state level) are the primary custodians of land records. The department is tasked with maintaining land records (i.e., RORs) and maps, updating them from time to time, and issuing copies of these records when required by citizens.
- ⁷ Determining the precise boundary or territorial jurisdiction, or a specific point in time or process at which the updating of revenue records ceases in peri-urban and urban regions is challenging.
- ⁸ In practice, a registered deed is often considered by the citizens as a record of ownership of land or property, especially in urban areas and for apartments. However, the legal position varies. Legally, a registered deed is evidence of a transaction having taken place between two parties. It does not necessarily signify ownership of said property. Similarly, property tax records by themselves are also not a legally sound evidence of property ownership. Majority of municipal acts require urban local bodies (ULBs) to maintain a property register including details of occupier/taxpayer/resident, and not necessarily of the owner of the property.
- ⁹ Figure 1: Location: Hanuman Nagar, Kankarbagh, Patna; Source: <https://parimarjan.bihar.gov.in/biharBhumireport/ViewJamabandi>; Figures 2 and 3: Location: Kadipur, Gurgaon district; Source: <https://hsac.org.in/eodb/>; Figure 4: Location: Akurdi, Pimpri Chinchwad, Pune, Maharashtra; Source: <https://bhulekh.mahabhumigov.in/>, All retrieved on 12 September 2023.
- ¹⁰ See Department of Land Resources (DOLR), and DILRMP MIS 28.07.2023.
- ¹¹ Property details in the ROR are supported by a property-level sketch (called *tatima*, *akarbandh*, *tippan* and field measurement book [FMB] sketch in various states), and sometimes a larger cadastral map showing all landholdings in a village. Typically, spatial records are not as up to date as the ROR, as either there are no set processes for its regular updation or the processes are not followed in practice. The area of a land parcel as denoted by a spatial record may vary from the one noted in the textual record, especially for land parcels measured through recent survey methodologies.
- ¹² These services include surveying of land parcels, computerisation of records and digitisation of spatial records under DILRMP; and property tax surveys in ULBs.
- ¹³ These include startups for legal due diligence enabled by big data and machine learning, data analytics using property transaction data sets, rapid online document search and geospatial analysis platform for inventory management and revenue enhancement, among others.



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