

Digital Land (Comprehensive System of Land Management)

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Overview

Uttar Pradesh has 18 divisions, 75 Districts and 350 Tehsils spread across 2.35 crore hectare land area, which is divided into 1,08,848 revenue villages with 7.65 crore plots with 11.19 crore owners and 3.38 crore Khatas in Khatauni (RoR) and 2486 Revenue Courts with 11.24 Lakh Revenue Court Cases. Before the "Digital Land" initiative, all the disputes and their records were maintained manually. The manual records gave rise to data manipulations, for corrupt purposes, and led to lack of transparency in the whole process.

"Digital Land" is a project conceived and implemented by the Government of Uttar Pradesh for Digitization of Land Records, with technical support of NIC UP State Centre, presenting a model of a paradigm shift from department centric closed approach to citizen centric open approach and a process oriented system to a service oriented system. It is an integrated and interoperable solution for extending e-Services related to rural land of Uttar Pradesh. It comprises of online web applications of Land Records, Revenue Court Cases, Bhu-Naksha (Digitized Cadastral Maps), Khasra (Field book with Crop details), Online Mutation (for recording Succession or Varasat) and Anti-Bhu-Mafia Portal (for action against land grabbers). All these applications have been integrated on a single platform

and further integrated with/being utilized by applications of other departments like Registration (for sale/purchase of Land), Food and Civil **Supplies** (for Food grains Procurement), Agriculture (for Farmers' Loan Waiver Scheme, Soil testing, Agriculture Survey and Pradhan Mantri Kisan Samman Nidhi Yojna), Forest (for creating Land Bank

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and Compensatory forestation), CM Office (for review of public grievances - Jan Sunwai), e-District (for issue of solvency, income, domicile and caste certificates)

and Banks/Financial Institutions (for recording mortgage etc.) through web services/user-login.

This huge and inter connected data generated in the applications of Digital Land project and the information based on this data is being made available online to the common public and other stakeholders through several points of online services including more than 85000 Common Service Centers and Lokvani Kendras. Apart from bringing transparency in the system, reduction in corruption and harassment of public, the "Digital Land" project is generating revenue of crores of rupees for the service providers as well as the Department through the distribution of digitally signed Khatauni (Record of Rights or RoRs). About one crore users are being benefitted with this e-Gov initiative every day. The project indeed has not only modernized the management and upkeep of Land Records but also had significant impact on litigation, disputes and related crimes and violence emanating from these land disputes.

Goals of the Project:

- Improvement of working efficiency
- Elimination of duplicate and inconsistent record keeping
- Reduction in dependency among various stakeholders
- Electronic security and control of confidential data
- Improving decision making in view of better reporting mechanisms

Historical Background of Land Management in U.P.

Historically, in the absence of other major economic activities, the main source of tax or revenue for the Rulers or Governments, was the land revenue collected from the farmers. During Mughal period, it was known as **"Chauth"** implying that one fourth of the crop produced, had to be given to the State as land revenue or Tax. In order to assess the land revenue to be collected from the farmers, land measurement, record keeping and land management procedures were evolved.

One of the earliest land records management systems was developed during Emperor Akbar's reign by Raja Todar Mal (one of the nine Nav-Ratnas in Akbar's court), who is regarded as the father of land record keeping in India. When the British came to India, their utmost priority was to maximize their revenue. It is no surprise that as soon as the British Crown directly took over the control and administration of India from East India Company after 1857, they set up an elaborate system for assessment and collection of land revenue, which was called "Lagaan". The post of "Collector", who was responsible for the collection of Government revenue, was created at the District level and Collector became the most important and nodal functionary of the Government. At the State level (in Uttar Pradesh), Board of Revenue was set up as the Apex body for supervising the work of all the Collectors and Commissioners in the State and for reviewing the collection of land revenue and management of land records. It is interesting to note that the Board of Revenue, UP was set up in 1861, much before Allahabad High Court in 1866 and the UP Land Revenue Act, 1901 came into being, even before the Civil Procedure Code, 1908.

After Independence in 1947, major land reforms for more equitable redistribution of land amongst the landless labourers were introduced in Uttar Pradesh (U.P.), through legislative measures such as the enactment of The UP Zamindari Abolition and Land Reforms Act, 1950 and The U.P. Imposition of Ceiling on Land Holdings Act, 1960. Further, legal reforms, in the form a unified Revenue Code-2006, which merged nearly 39 separate land related Laws/Acts into a single Act, were implemented subsequently. However, the system for maintenance and upkeep of land records remained almost unchanged since Independence in 1947.

This Case Study details a real life story wherein Mr. Sunil Kumar, an individual from Rural UP, who is in the process of searching, analyzing and buying a land for agricultural purposes, overcomes various roadblocks to ensure smooth acquisition and transfer of appropriate land from the real owner to himself. In this case study, some names and identifying details have been changed to protect the privacy of individuals.

Issues and Challenges

Mr. Sunil Kumar is a resident of Akbarpur Village in Mawana Tehsil in Meerut. He has been a resident of Akbarpur for more than 35 years and during this time he has seen many disputes arising due to sale/purchase of land to multiple individuals, seller failing to mention that the land is not for agricultural use or manipulation in land records. Sunil currently uses his family land, which was owned and passed on by his grandfather, for agricultural purposes and observed that he can increase his household income by expanding the agricultural operation by purchasing an additional plot.

However, he was reluctant to jump into the system to purchase land because he has seen how his friend Mr. Rakesh Choudhary, also a resident of Akbarpur, was duped by a sly seller named Mr. Roshan Rastogi. Roshan, who was an owner of multiple plots in and around Akbarpur, had used the system for his corrupt purposes and sold the same land to multiple individuals, including Rakesh. Additionally, the land which Roshan sold was not capable of being used for agricultural activities as that plot was a designated shamshan (cremation ground), which unfortunately the buyers had no means to know because of lack of easy accessibility of such records.

Thus, before making a final decision regarding this, Sunil sat with his friend Rakesh in early 2017 to note down what would be the issues or challenges that he would have to face due to the unavailability of any system or portal to provide such required information. He found that there were following issues:

(i) Manual Records: The manual management of records was prone to errors, both deliberate and otherwise, and their lack of transparency and accessibility resulted in harassment of farmers and common public. The management and upkeep of land records was slow, inefficient and error prone and it was almost impossible to correlate, reconcile, and interlink it with other data bases due to its nature and sheer volume. Manual records were also prone to errors and manipulation by corrupt petty officials which lead to innumerable disputes and litigation. The manual data was also extremely difficult to sort or analyse and resulted in erroneous data analysis.

- (ii) Lack of Transparency and Accountability: This increased scope of corruption, as Registry of lands, Mutation, and other paperwork was based on manual reports provided by various officers in the chain. If in the Record of Rights, a mutation of a disputed land was done, it could not be traced back as to whether any officer provided a wrong report or whether the data entry operator made an error in entering data or if any of the persons in this whole chain registered such incorrect mutation in collusion with the buyer or seller of that land.
- (iii) **Data entry and reconciliation of the data**: Considering the size of the State like U.P. and the sheer volume and size of the data involved, the data entry and its reconciliation with the manual records was a huge challenge. It required a sustained push from the top, with motivated leadership at District and Tehsil level and active involvement of the entire Revenue Administration in the State, who had to do this extra work in addition to their regular duties. It was also important to overcome the resistance and obstacles created by the vested interests, who used to exploit the old corruption prone manual system.
- (iv) **Registry and Documents:** Courts throughout the State had to be convinced to accept the registry and mutation documents containing digital signature of the Revenue Inspector (Computer), as admissible evidence for cases.
- (v) Lack of solutions to secure and validate data: Maintenance of data on different client servers caused mismatch and errors. The authenticity of data uploaded could not be verified. There were time-lags in integrating the data on different client servers.
- (vi) Integration of resources: Shifting to online system meant huge pooling of resources in terms of digitally literate manpower, financial resources for

creation of online databases for records of court cases, scanned maps, record of rights etc., setting up the infrastructure for back-end integration of all such databases, arrangement of enough cloud storage space, capacity-building of employed data entry operators to be able to work on the new digital portal and creation of thousands of digital signatures, etc.

Interventions by the Board of Revenue

After listing down all such potential issues, Sunil got sceptical and thought whether he should drop his idea of purchasing land because he will not be able to get a fair and easy buying process due to so many problems. However, Rakesh interjected and mentioned that he has heard of a new project called "Digital Land" (<u>http://upbhulekh.gov.in</u>), which has done a baseline study in which the project conducted a rigorous requirement analysis to understand the proper functioning of Land records and revenue court cases with respect to their digitization.



Additionally, the project representatives had conducted detailed discussions with the relevant stakeholders and studied the manual documents in order to understand the complete life cycle of land records and Revenue Court Cases Management System (RCCMS), as well as their inter-dependence.

Sunil, who was unaware of any such project, inquired as to how Rakesh came to know about this. Rakesh mentioned that the project representatives had conducted various seminars on development and functioning of the software for the concerned personnel, and Rakesh by chance was able to attend a seminar conducted for the outreach to the public. In the seminar they mentioned that they have dedicated resources who have conducted department-level training sessions for all the Revenue Officers of State, District and Tehsil levels. Moreover, the department has shared the success stories of various departments with other departments so as to motivate them to participate eagerly and take initiative. Also, a help desk was established at the Board of Revenue, Lucknow, for administrative and technical support to stakeholders.

In the seminar, the representatives also detailed on the technology platform used i.e. all the applications under "Digital Land" project were made functional and hosted on the Meghraj Cloud, after security audit. Also, for ensuring accuracy and authenticity of data, QR Code, Digital Signature, Bar Code etc., were introduced.

After knowing that before the application of this project was initiated, comprehensive and detailed Government Orders, Board Orders and instructions were issued, Sunil was happy and decided to know more about this initiative and restart his land search process using this platform.

"Digital Land" Solution

After the brief description of the "Digital Land" project, Sunil's confidence to purchase a plot for agricultural purposes was revived. To understand the usability and cost, both Sunil and Rakesh registered for an outreach seminar being conducted in Meerut city by Mrs. Nayanika Malik, a core team member of the project. At the seminar, Sunil saw some familiar faces, whom he had met around Akbarpur when he went to various sellers to inquire about their land.

Nayanika began the seminar by introducing herself and her role in the project. Then, Nayanika mentioned that although several other States have also taken significant initiatives for digitisation of Land records, what makes the "Digital Land" project of U.P. unique is the concept of assigning a Unique 16-digit code for each and very field or Revenue plot (Gata) in the State. These Unique codes, which are like Aadhaar number of the plot, have been assigned to each and every Plot (about 7.65 Crore) in U.P. (except for villages under Consolidation or Survey).

The first 6 digits of this Unique code are the Revenue village code of the village where the plot is situated (same as allotted by the Registrar General of India for Census). The next 4 digits (7th to 10th) display the plot number, whereas the subsequent 4 digits (11th to 14th) display the status of its division, etc. The last 2 digits (15th and 16th) display the category of the land.

Sixteen Digits	of the Plot Code a	are as follows :-	
хххххх	xxxx	xxxx	хх
(1-6) Village Code	(7-10) Plot number	(11-14) Division details	(15-16) Land category

At present there are only 25 categories of land in U.P. but this list may be further expanded and also standardised to add more categories such as Defence land, Waqf Land, Evacuee property, Enemy property, etc. Such categorisation and standardisation makes it possible to generate a list of all the lands belonging to a particular category that are situated in a designated revenue area. The simplicity of this concept makes it easy for other States too to replicate this concept and adopt it. If the categories are standardised at the national level, then by just one command it would be possible to search, sort and analyse the Land records data of not only U.P. but the entire country.

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The Unique codes of the land plots involved in the disputes/Court cases pending before various Revenue courts have been successfully inserted in the RCCMS data base as a compulsory field. As a result, now any prospective Buyer/Entrepreneur who is interested in buying a plot of land can check online, not only about

the ownership of the plot, but also whether or not the plot of land he proposes to buy is under litigation in any Revenue Court of U.P.

In order to bring about further transparency in respect of the Land Records, information about mortgage of land by Banks or Financial Institutions has also been put into public domain. As a result, any prospective buyer can also find out whether or not the land he proposes to purchase is mortgaged or not.

As part of the "Digital land" project, the village maps have also been digitised and linked with the Khatauni (Record of Rights). Thus, on one click of mouse, a person can see the exact location of any plot, find out its shape, area, ownership,

category of land and also the details of the neighbouring plot owners, etc.

After the seminar was over, Sunil and Rakesh met Nayanika and raised a query that if a seller doesn't provide such a code to his property then what should a buyer do and how does an individual check whether the land has been sold to more than one person or not.

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Nayanika delightfully reverted back and mentioned that it has now been made mandatory to mention the unique code of the plot in the sale deed of the plot being sold or purchased. As the software of the Stamp and Registration department has been interlinked with the Bhulekh portal of "Digital Land", it is now possible to block the fraudulent sale of lands belonging to non-transferable categories, e.g. Gaon Sabha land, patta land, ponds, pasture land, forest land or other public utility lands at the sale-purchase level itself. This has not only secured the precious public land but also curtailed future litigation and disputes. Many a times there used to be cases where fraudsters used to sell the same plot of land to more than one person and run away, while the various purchasers used to fight and litigate endlessly. Now that the Registration software has been interlinked with Bhulekh portal under "Digital Land" project, it is now possible to check online whether a particular plot of land has been sold/transferred previously and if so, then on which date, to whom and through which Registered document.

"Digital Land" has enabled Sunil to now sort, search and analyse the land records data to find a suitable plot. Additionally, the possibility to now generate a list of plots of a particular category (with any given search criteria), e.g. ponds, pasture lands, public lands, etc., in any village, Tehsil, District or even entire State has eased the buying process for Sunil.

Impact of "Digital Land"

The Digital Land application has had tremendous social and economic impact in the State by bringing in transparency, reducing corruption, reducing land disputes, Court cases and related crimes/violence and generating revenue for the Government, while providing income and employment to lakhs of people working in Common Service Centers and Cyber-cafes etc.

(i) *Citizen:* Almost all the manual processes have been eliminated and all the records are now maintained in digital form. Thus, efforts in keeping the details of records on paper are no longer required. This has resulted in reduction of corruption as earlier farmers used to run after the Revenue officials to get the extract or copy of the Khatauni (RoR). Land registry, RCCMS and Land records have been successfully integrated. If any sale/purchase is done for a plot, then at the time of registry, the Sub Registrar is able to access all the relevant information of that rural land online, through this integration.

- (ii) Efficiency: On a daily basis, it has been recorded that approximately 90,000 digitally signed Khatauni (Records of Right) are issued. Digitization of the entire process has not only provided ease in coping up with lakhs of such transactions everyday but has also ensured transparency and safe record keeping. It has also reduced the time taken for processing of such transactions. Approximately 5,000 new cases are registered under RCCMS and details of approximately equal number of cases, which are disposed of daily, are made available on the RCCMS portal.
- (iii) **Cost Effectiveness:** The "Digital Land" project has been deployed on Meghraj Cloud free of cost and a major part of it has been developed on open source software, under administrative supervision of Board of Revenue, with the technical support of NIC UP State Centre. As such, the cost incurred on "Digital Land" project is nothing more than the cost of a few outsourced manpower. On the other hand, the revenue generated by the project is in crores of rupees. It is observed that daily approximately 90,000 digitally signed RoRs are issued at a cost of Rs.15/- per RoR, generating an average revenue (User charges) of Rs.13-14 lakh per day. Thus, the project is not only self-sustainable as it is earning approximately Rs.13 – 14 lakhs a day through issue of digitally signed RoR, but is actually highly profit generating and revenue surplus. The amount of user charges so collected is kept in a fund at Tehsil level which is utilized for upkeep and modernization of records and for meeting various other expenses. "Digital Land" has so far generated a total revenue of Rs.380.47 crores in the form of 'User Charges' since its inception, whereas the total expense for its implementation has been practically negligible.

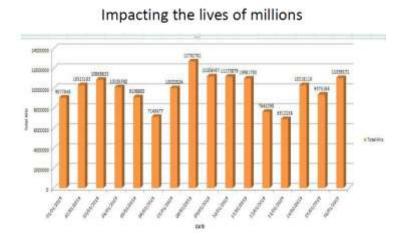
The success of "Digital Land" project can best be assessed by the number of people accessing it and making use of it. Judging by that criteria, today "Digital Land" is undisputedly the biggest G2C (Government to Citizen) service being

offered in India, which touches the lives of nearly 1 Crore (10 Million) citizens every day, as evident from the numbers of daily hits received.

Month Wise - Average Daily Hits Received		
Apr 2018	7322668	
May 2018	8498535	
Jun 2018	9028349	
Jul 2018	8757914	
Aug 2018	9263239	
Sep 2018	9794549	
Oct 2018	8932125	
Nov 2018	8365361	
Dec 2018	9119892	
Jan 2019	11908290	
Feb 2019	26130840	
Mar 2019	11939344	
Average Daily Hits during April	10755092	
2018 to March 2019		

In the initiative, land records data can be viewed online, which has reduced usage of paper, making the project and its processes environment friendly.

Digital Land



"Digital Land" has also made it possible to transfer various subsidies, relief funds and other benefits directly into the bank accounts (DBT) of actual beneficiaries as it is possible to identify, sort and filter genuine beneficiaries under any scheme depending on the size of their

land holding. On 24th Feb 2019, under PM Kisan Samman Nidhi Yojana (PMKSNY) scheme, Rs. 2000/- each were transferred into the bank accounts of more than 1 crore beneficiaries in UP, by Hon'ble Prime Minister. This was made possible only because of successful implementation of "Digital Land" Project.

The result of "Digital Land" for Mr. Sunil Kumar was that he was able to purchase an agricultural plot without any hindrances from dishonest sellers like Mr. Roshan Rastogi. In the process, Mr. Sunil has successfully avoided sellers who have an intention to indulge in sale of same property to multiple individuals. Moreover, by sharing this information with others, "Digital Land" has helped to reduce/eliminate dishonest sellers and bring in transparency in the sale/purchase process.

Way Forward

All the applications under "Digital Land" project are already functional and hosted at Meghraj Cloud of Government of India after security audit. Applications are well designed and work effectively with minimum resources of client and servers. These applications are scalable in terms of technology and the services being offered.

"Digital Land" has the potential to be scaled up at national level and can be replicated in all States of India. The Department of Land Resources, Ministry of Rural Development as well as NITI Aayog have acknowledged and appreciated the concept of Unique Code for fields and are taking initiatives to replicate it across the country.

"Digital Land" project, with the help of technology, is transforming the lives of rural population in U.P. and realizing the dream of Digital India of Hon'ble Prime Minister of India. It has reduced the time taken in managing and maintaining records, increased accuracy and efficiency and enhanced safety of records maintained. Apart from these benefits, Digital Land has increased the accessibility of all information related to land title/dispute or any other issue (whether the land is reserved for any specific purpose by the State Government or not including future plans like town planning, etc.) related to the land title to the citizens. It is also leading to reduction in corruption and inconvenience caused to public, thus making it a perfect example for good governance. Aligned with the principle of Minimum Government and Maximum Governance, "Digital Land" is setting an example for India to emulate.

Teaching Notes

Learning Objectives:

- Importance of innovation and technology to bring transparency and proper accountability in the Land Records system
- Simplicity and uniqueness in methodology adopted for digitization of land records

Suggested Questions and Analysis

a) What are the key points to be kept in mind for replicating "Digital Land" in other States based on demographic and geographic differences? What steps should the project representatives take to enable better comprehension of their project in different Rural Areas?

Prepare a 1 slide presentation with a view to enable the reader to understand the crux of the project in layman's terms.

b) Mr. Ramesh Trivedi has been sold land for commercial purposes but it can only be used for agricultural purposes according to official records. How can Mr. Sunil Kumar along with Digital Land representatives help Ramesh in solving this issue and providing a way forward?

Group Discussion and Role Play Activity

Divide the participants in groups of 4-5 and discuss the case on following aspects. Each group should take one aspect:

1) Discuss the impact of having multiple web portals for various land record applications as compared to one portal with all applications integrated in it.

2) What should be next steps in the project? How can "Digital Land" use the huge number of daily hits to its advantage? Is there any way to monetize daily hits?

Role Play Activity

Make three groups of 2-3 participants each

- The first group (Team Sellers) should represent the sellers of different types of land
- The second group (Team Buyers) should represent the buyers with varying objectives and criteria for purchasing of land
- The third group should represent Team Digital Land

In the beginning, **Team Sellers** could represent the role of Mr. Roshan Rastogi, a seller who wants to make profits at any cost and **Team Buyers** will represent Mr. Rakesh Choudhary, who is currently unaware of the interventions made by Digital Land. This aspect of the role activity will enable the students to understand the weak points which the dishonest sellers exploited previously.

Later on, the role of the **Team Buyers** would change and include both Mr. Sunil Kumar and Mr. Rakesh Choudhary. Both of them take up the issues/challenges with a representative from **Team Digital Land**. After understanding the issues/challenges, **Team Digital Land** will try to provide some solutions to these challenges and conceptualize an online system to address these issues/challenges.

The objective of this exercise is to enable the participants to conceptualize solutions to the issues prevalent before "Digital Land" and compare it to the "Digital Land" project. Additionally, this allows the participants to understand the thought process of the seller and buyer pre-Digital Land and post-Digital Land.

Summary - Key lessons learnt (15 minutes). Each participant shall write down a summary in not more than 500 words highlighting key learnings from the case.

Abbreviations

Abbreviations	Full form		
СМ	Chief Minister		
DBT	Direct Benefit Transfer		
G2C	Government to Citizen		
NIC	National Informatics Centre		
NITI	National Institute for Transforming India		
PMKSNY	PM Kisan Samman Nidhi Yojana		
QR Code	Quick Response Code		
RCCMS	Revenue Court Cases Management System		
RoR			
	Record of Right		
UP	Uttar Pradesh		