



## Registering property

### The paths of digitization

- Over the past five years 37 economies computerized their land registry.
- In the economies that digitized their registry, the time required to transfer property has fallen by 38% since 2011. In those that did not, the time has decreased by only 7%.
- Before making the transition to a digital land registry, policy makers need to take into account such considerations as the legal framework, technological capabilities, and human and social factors.
- Going digital can be done in several steps—starting with computerization of the registry and moving on to fully online registration of immovable property.
- Beyond going digital, land registries can develop new services—such as mobile applications and interconnection with other agencies.

Ten years ago, transferring property in Rwanda took more than a year. Today, thanks to the web-based Land Administration Information System implemented in Kigali, the process takes only a month. Rwanda's case is not unique. Over the past five years 37 economies computerized their land registry. The average time required to register a property transfer in these economies fell by 38%—from 47 days to 29—while the global average only decreased from 55 days to 48 (figure 8.1).

Economies that invest in a digital land registration system benefit in several ways. One way is through greater efficiency. Computerization helps reduce duplication in the storage of information and makes it possible to consolidate a large amount of information in one

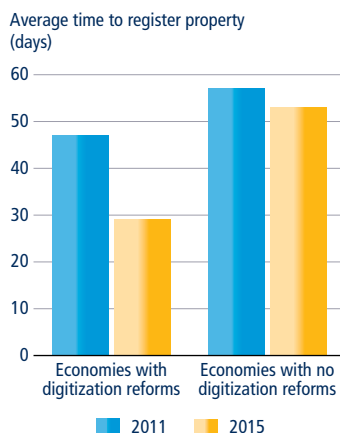
database. It also optimizes processes by streamlining workflows and helps compile information in ways not possible with manual systems. Faster processes reduce the time involved in transferring property rights and speed up mortgage applications, saving the land registry and applicants much time. Computerization also allows a land registry to set up tracking mechanisms to assess its performance and improve its services to customers.<sup>1</sup>

Data accuracy is another advantage. Because each transaction entered in a computerized system can be automatically registered, information is up to date. A computerized system also provides built-in mechanisms for quality control, allowing land registry staff to perform consistency checks and verify data instantly.

Computerization can increase security by allowing backup copies to be made. The latest data can be saved in different locations and protected from natural disasters such as floods or from events such as arson or civil war.

Computerization also strengthens transparency by making land records more accessible to all stakeholders. A computerized system makes it easier for different people to access data in different locations at the same time. By sharing information online, it takes away discretion and reduces opportunities for arbitrary action. With simple and transparent rules, a digital system emboldens citizens and businesses to question unreasonable procedures. When the Indian state of Karnataka digitized its land records,

**FIGURE 8.1** The time required to register a property transfer fell sharply in economies that digitized their land registry



Source: Doing Business database.

### BOX 8.1 How did one of the oldest land registration systems become a modern digital organization?

Her Majesty's Land Registry—covering England and Wales—is one of the oldest land registration authorities in existence today. Launched 153 years ago, it was modeled on a pilot project in South Australia that spread to most of the English-speaking world. In London the first land registry opened in 1862, with six staff. Land registration then gradually expanded across England and Wales.

In recent decades digitization has transformed the land registration system of England and Wales. Computerization of the land registry was recommended by a study in 1968 and began in 1974; work on computerizing the index of property owners' names began three years later. The conversion of paper land registers into computerized format began in 1986. Development of internal computerized casework systems also started in the 1980s. Each land registry office's information technology network was connected to a main data processing center, which updated the land register in real time. The new system was rolled out over several years, and by 1992 the land registry had 10 million titles registered in its database.

In 1997 the land registry began scanning the historical land records—272 volumes containing a mix of handwritten and typed pages made from parchment, waxed linen or paper along with printed documents. By 1998 the total number of titles registered in the database had reached 15 million, while the total number of stored deeds, kept on 80 miles of shelving, was estimated at almost 100 million.

The next major step was the Land Registration Act of 2002, which introduced online registration to transfer property. The first internet service was launched in 2005, allowing any applicant to obtain information on any property by entering the identification data. Then it became possible to electronically update the land register in cases not affecting ownership. Finally, it became possible to actually transfer property online using electronic signatures.

In January 2013 the British government gave itself 400 days to transform 25 major services—including land registration—by making them simpler, clearer and faster to use. In 2013/14 the land registry increased its productivity by 21% despite a 16% rise in applications. Some 76% of substantive applications were submitted electronically in 2014, and today about 24 million titles are registered.

Additional improvements are planned in the future. During the Queen's speech at the opening of Parliament in 2014, Queen Elizabeth II announced a new infrastructure bill to “help make the United Kingdom the most attractive place to start, finance and grow a business”—including by supporting the delivery of new digital services by the land registry.

*Sources:* Cooke 2003; Mayer and Pemberton 2000.

it also made the records more open—to empower citizens to challenge arbitrary actions.<sup>2</sup> Land registries with robust internal data recording, control and validation systems are more easily accessible and more open for collaboration with external stakeholders. In several cases this has had an impact on access to credit, such as in urban areas of India.<sup>3</sup>

Land registries need not go fully digital all at once. They can start by shifting from paper to digital record keeping and then move to fully online registration. Economies around the world have successfully made the transition—including England and Wales, where 24 million titles were digitized, and Ireland, where about 1.7 million individual titles representing 32,000 paper map sheets were digitized (box 8.1). Their experiences offer information not only on the process of digitization but also on its benefits—and can serve as an inspiration for economies

still struggling with a paper-based land registry.

Digitization is not reserved for high-income economies; many developing economies have also digitized their land registry. Cabo Verde is one of them. In its two biggest cities, Praia and Sal, all property titles have been fully scanned, and software to process registrations successfully implemented. In Kenya the land registry of Nairobi has recently gone through a full digitization of its records and is now developing new electronic services for its customers. Going digital is a step-by-step process that can take different paths (figure 8.2).

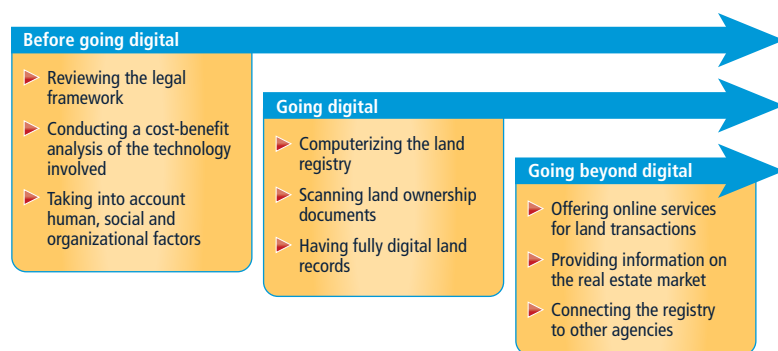
### BEFORE GOING DIGITAL

The transition from a paper-based land administration system to a digital one involves several considerations, including

the legal framework, technological capabilities, and human and social factors.

A necessary first step before going digital is to review current laws and regulations relating to land registration. Out-of-date legislation can be an impediment. In Guinea-Bissau, for example, titles were required to be handwritten and so could not be processed by computer. This requirement was removed in 2013. In other cases new regulations were needed to support computerized systems. In Malaysia the National Land Code had to be amended in 1992 to introduce new provisions relating to functions of the computerized land administration system, such as recording changes to land titles and extracting data from land records. In the United States the Uniform Real Property Electronic Recording Act, allowing electronic documents, was passed in 2004.<sup>4</sup>

FIGURE 8.2 What are the stages in projects for digitizing land records?



Another important first step is to review existing practices at the land registry. Going digital does not mean computerizing every process at the registry. Manual systems for land administration can be cumbersome. A review of the registry's practices can identify procedures that are redundant and processes that need to be reengineered to enable electronic submission of records. As successful land registry reforms have shown, the process for obtaining approvals required for land transfers can be simplified if a robust registration system is in place.

Choosing appropriate technology is a key step in designing a new digital system. Different stages of development require different technology solutions that take into account any constraints and limitations. Ghana and Uganda each developed a technology approach in line with their capacity, objectives and resources. Uganda opted for proprietary software while Ghana relied on open-source software. The open-source solution is likely to save on annual software fees, but it requires Ghana to develop the local capacity to maintain the programs.<sup>5</sup> Developing such capacity is critical to ensuring that the system is sustainable.

Any successful plan for going digital also needs to take into account potential obstacles in the overall land administration system. This includes obstacles that the design of the new system might pose for different stakeholders. Having many

different land databases with no links between them can be one such obstacle. In several cases a preliminary step in digitization was to consolidate all the different databases into one—fundamental not only for strengthening the system's organizational structure and efficiency but also for providing security of title. Belarus started its digitization program by unifying the land and building registries' databases. Denmark also began by centralizing information. The country had a complex system with an archive of 80 million paper documents managed by local district courts that were not connected to one another. Denmark centralized the information in the Land Registry Court, which now administers the registration of rights on all property in the country.

Investments in the land registry's infrastructure need to be complemented by well-prepared and well-trained staff. Without buy-in and full understanding among the registry employees, no new digital system will succeed. And adequate training is essential for achieving top-quality services and efficient management of land records. In Croatia more than 2,000 land registry employees benefited from detailed training on the new information technology system put in place throughout the country.<sup>6</sup> In India several thousand civil servants were trained in the states where digitization was initiated.<sup>7</sup> Successful training policies can contribute to innovative construction

processes and to the development of real estate products.<sup>8</sup>

## GOING DIGITAL— IN SEVERAL WAYS

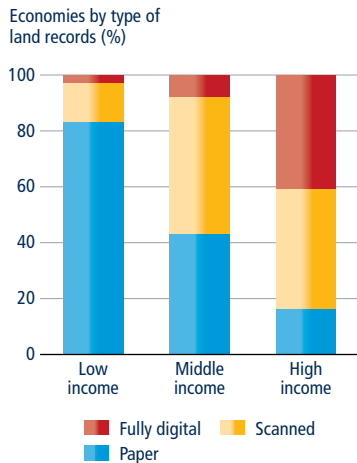
Once an appropriate legal framework and data system have been established, the land records can be converted into a digital format so that they are properly stored and protected from the effects of time (excessive use, moisture) or even natural disasters (floods, earthquakes).<sup>9</sup>

One viable way to digitize historical records is to scan or microfilm them (figure 8.3). After a flood affecting land records in 2000, Mozambique scanned most of its titles in Maputo in 2013. Scanning land documents offers several advantages. It allows a backup system for data and helps maintain the integrity of public records over time for a limited cost. And scanned archives can be easily shared with the parties to a land transaction.

But scanned records, while a big step up from paper-based databases, do not allow users to extract information—because by definition they are stored as images. An alternative to scanning is to input the information from land records into a digital database. This approach is costlier and more time-consuming, but it has a much greater effect on efficiency. A digital database allows users to conduct quick title searches and provides powerful protection against double registration. Digital records also make it easier to access information about a property, including liens and encumbrances.

Computerizing a land administration system takes time and yields results only in the long run—as the example of Denmark illustrates (figure 8.4). Mauritius implemented a new electronic system in 2011. The system allows automatic population of information on registered properties dating back to 1978 and enables different branches of the Registrar-General's

**FIGURE 8.3** The type of land records varies widely across income groups



Source: Doing Business database.

Department to share information, increasing efficiency. The system also allows users to copy information from scanned deeds. In four years, thanks to the new system, Mauritius was able to reduce the time for registration from 210 days to 14.

### GOING BEYOND DIGITAL RECORDS

For a land registry, launching a fully digital database is a crucial step in increasing the reliability of its records and services. It is also a first step toward greater connectivity with other agencies involved in property transfers, such as the cadastre and tax authority. And it is a precondition for offering online services.

With a digital database in place, a land administration system can start to offer electronic certificates of nonencumbrance, which guarantee that there is no lien on the property. The system in many economies allows users to conduct title searches online and immediately issues the certificate of nonencumbrance through its web portal or sends the certificate to the user within minutes (figure 8.5). In Costa Rica, for example, users can obtain property certificates and certified

cadastral plan images on the same website. In Azerbaijan notaries have been able to obtain nonencumbrance certificates online since 2014. Where electronic certificates are introduced, the law may need to be amended to make the certificates legally binding—a critical step.

Some digital land registries go further, allowing online registration of property transfers—now possible in 40 economies. Some set very high standards. In countries such as the Netherlands and New Zealand customers file their application through the land registry’s web portal. In New Zealand a lawyer can process the transfer immediately through the registry’s portal. In Austria applications for a property transfer must be submitted electronically through a data exchange system, an online communication system used by notaries, lawyers and the courts (where the land registry is based) to submit claims, briefs and applications and deliver court transcripts, orders and decisions. This system provides standard forms for different kinds of applications, such as for registration of ownership and registration of mortgages.

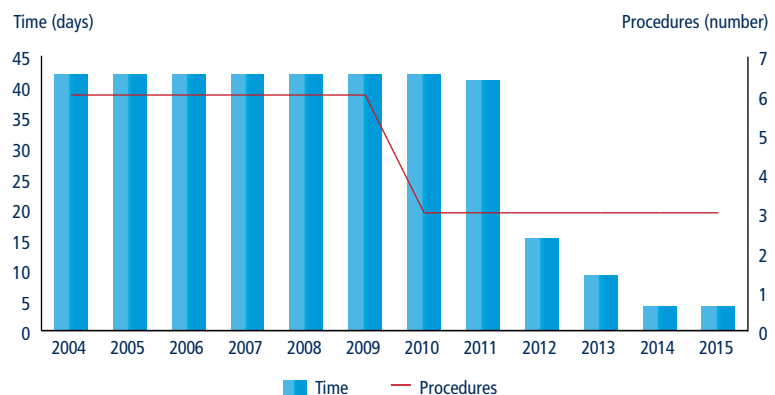
Some land registries are using their online systems to offer more mobile services. In some economies the land registry offers to have a trained member of staff come to the customer to register

the property transfer. In Portugal banks can request that a registry employee come to their premises with a laptop and secure access to the registry’s database to complete the property transfer there. In other economies a customer can complete the registration using any computer connected to the internet. The United Arab Emirates has developed a mobile application to help customers complete a property transfer using their mobile phone.

Online systems can do more than streamline the process at the registry. Setting up a single system or portal connecting all agencies involved in property transfers can ease the burden for firms or individuals in complying with requirements from the different agencies. It can also aid the government, by helping to eliminate duplications of effort and inconsistencies in records. A single system or interconnected portal ensures that all agencies are automatically updated once an application is processed. This is the case in Panama, for example. Colombia, Italy and Peru have developed portals that connect the notary to the land registry and the ministry of finance.

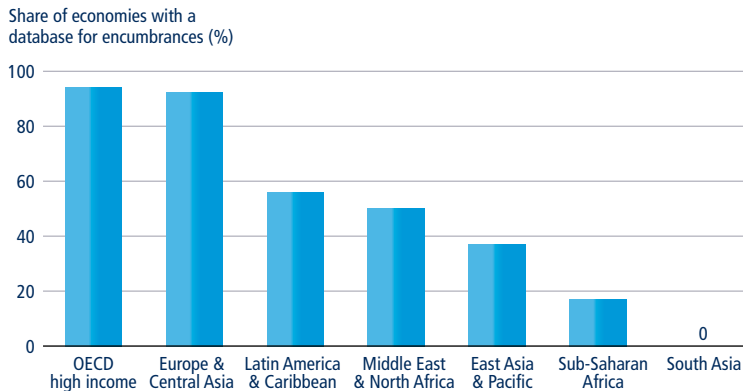
To ensure complete information about property, mapping agencies in 89 economies have an electronic database to record property boundaries, check maps

**FIGURE 8.4** Denmark implemented a fully computerized system over several years, reducing the time and procedures to register property



Source: Doing Business database.

**FIGURE 8.5** Electronic databases to check for encumbrances are very common in OECD high-income economies and Europe and Central Asia



Source: *Doing Business* database.

and provide cadastral information. Some have geographic information systems, which allow users to integrate, store, edit, analyze, share and display geographic information. Combining information on the location of the plot with information on liens and encumbrances streamlines the due diligence process.

In addition to offering services online, making information readily available on a portal or website is also considered good practice. The land registry in Zambia displays a detailed list of procedures and documents required for the registration process on its website. In 104 economies people can find the land registry's fee schedule for the largest business city online. Some land registries have developed a fee calculator plug-in on their website so that customers can calculate the expected cost for a particular property transfer. Publishing such information saves customers time in inquiring about the process. It also eliminates asymmetries in information between users and officials, minimizing the possibilities for informal payments and abuses of the system.

Land registries have also been using their online systems to enhance the transparency of their operations and improve

customer service. This is the case in Bangladesh, where technology is considered critical to increasing the efficiency of the land administration system.<sup>10</sup> Several land registries use their electronic systems to share information about their activities. Lithuania's land registry publishes statistics on its performance on its website. Panama's publishes monthly data on the number of transactions that it completes, broken down by type—mortgages, first registrations and transfers. The land registry in the United Arab Emirates uses social media to keep the public informed about its operations. Some governments have provided customers with an online tool to track their applications and file complaints about land services. In Nicaragua applicants can use a tracking number to check the status of their deed registration on the registry's website.

## CONCLUSION

While many economies have modernized their land registry and are looking into the next steps, others still rely on archaic record-keeping systems. In 74 of the 189 economies covered by *Doing Business*, property titles in the largest business city are kept only in paper format. This can

substantially undermine the quality and efficiency of the land registry's services.

Developing economies should not be discouraged by the magnitude of the changes involved in going digital. Economies with varied circumstances and income levels have been able to digitize their land registry and substantially reorganize their land administration system—many through a step-by-step approach. Digitizing a land registry offers benefits not only through greater efficiency but also through safer and more reliable records and a more transparent process. It also improves the functioning of property markets by making land information instantly available. And it benefits citizens by improving the security of title and the accessibility of information.

## NOTES

This case study was written by Laura Diniz, Frédéric Meunier, Haya Mortada, Parvina Rakhimova and Joonas Taras.

1. Whitman 1999.
2. Bhatnagar 2003.
3. Deininger and Goyal 2012.
4. Kampamba, Tembo and Nkwae 2014.
5. Cheremshynskyi and Byamugisha 2014.
6. Croatia, Ministry of Justice 2010.
7. Habibullah and Ahuja 2005.
8. UNECE 2012.
9. Barthel, Barnes and Stanfield 2000.
10. Imtiaz and Rahman 2014.