Tackling Undocumented Land Rights Worldwide with Improved Cadastral Survey Productivity: Case Studies

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SUMMARY

This presentation will highlight the effort required to register unregistered land parcels worldwide, describe the time-consuming challenges involved with current cadastral surveying processes, identify process improvements to overcome these challenges, present case studies that prove out the productivity savings, and identify a path to leverage these productivity savings to accelerate land registration globally.

The volume of undocumented land parcels worldwide is estimated in the billions. In Uganda alone there are currently an estimated 15 million unregistered land parcels that government authorities estimate will take Ugandan surveyors 1,000 years to legally register.

Cadastral surveying has evolved significantly over the past 25 years, with the introduction of faster, lighter, and more accurate hardware technology to serve more traditional operations. Field and office software has also evolved to handle large volumes of data in smaller packages and in formats readily accessible worldwide. However, with all of these advancements, there still remain challenges in the transition phases of cadastral projects.

Workflows and processes that can introduce delays and challenges in the establishment of land rights include:

-Getting the right data/equipment to the right people at the right time

-Mixed fleet of hardware and software equipment

-Time-consuming process to update changes in the

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field

-Multiple iterations required between field and office

-Manual deliverable production and processing

Given these cadastral workflow challenges, we have identified several key technology integration components to streamline these processes:

-Map-based and data model-driven data collection tools

-Data validation and verification in the field

-Streamlined deliverable process

This presentation will highlight case studies of this workflow system integration with Ordnance Survey Northern Ireland (OSNI) and the German State of Brandenburg. In both cases, with these innovative workflow enhancements, we achieved significant overall productivity improvement which included reducing the average number of trips required for job completion and reducing the amount of time spent on each trip to the field.

Though these case studies were based in developed countries where access to connectivity, technology infrastructure and qualified personnel are prevalent; the workflow components identified are all relevant challenges experienced in developing countries as well.

By applying the productivity improvements demonstrated in these case studies within a developing world context, the current number of field crews could potentially conduct more parcel surveys in the same amount of time. When considering the scale of undocumented land parcels worldwide, these improvements have the potential to be material to the organizations undergoing land reform efforts.