Introduction: This thesis presents a comprehensive and integrated approach to cadastral data and process modeling using the Unified Modeling Language (UML). The UML, a standardized methodology for describing object oriented systems, is used to capture the static and dynamic components of the Cadastral and Land Registration System (CLRS).

The Problem: Poor land records management, non-integrated approach towards land information management, low cadastral coverage (missing information on informal and customary tenure systems), lack of technological advancement and poor CLRS Administration.

Objective: To analyze the existing CLRS in Kenya with a view of identifying the various data and processes; conceptualizing cadastral data and process models; and proposing ways of instituting a digital CLRS.

Methodology: Qualitative approach based on primary and secondary data collection and theory analysis.

Key Aspects: Cadastral and Land Registration System Use Case Model

Process Model: The Land Adjudication Process

Cadastral and Land Registration System Data Model

Application: Distributed Database Management System

Conclusion

- The UML renders data and processes in a manner that promotes understanding and that cultivates a culture for integrated Land Information Management.
- Process modeling provides a means of instituting reforms within the CLRS for improved land transactions and land delivery systems.
- Data modeling is necessary to solve some of the problems facing the land administration system in Kenya. These include the seamless integration of formal, informal and customary land tenure systems and the integration of the fixed and general boundary systems.
- The successful implementation of a digital CLRS requires investment in the training of personnel and the development of an ICT infrastructure.

Recommendations

- Incorporate informal & customary land tenure systems, land use planning data and street addressing into the CLRS;
- Institute training and continuing professional development;
- Review the legal framework on land to remove duplication of roles and reduce bureaucracy on land transactions;
- Incorporate ICT and data sharing issues in the Land Policy;
- Develop a centralized digital CLRS initially but gradually decentralize it.