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Using ICT to drive Business Process Change within Land Registry Offices

Symposium on Innovative Technology for Land Administration

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Real Property Context,
ICT Enabling Framework,
Integrating Cadastre and Registry,
Case Studies – National Land Agency, Jamaica and Spotsylvania County, VA.
Real Property is a principal source of wealth and wealth generation in a society,

Real Property rights that provide secure tenure and facilitate broad private ownership enable society to develop dynamic land trading practices and the formation of land markets,

Property is a cultural concept of the relationship between people and objects,

People can gain the right to process, use, enjoy and dispose of “objects”, and

The Concept of a “Bundle of Rights” - the rights related to the ability to possess, use, enjoy and dispose of real property.
“Bundle of Rights”

Government’s role is to define real property rights and to protect those rights.

Real property has a legal dimension.

Real property has a physical dimension; the things we can gain rights over may be tangible or intangible.

Real property has an economic dimension; real property is a store of value, an element of wealth - a safe “harbor”.

Properties

- Physical description
- Adastral survey
- Acres
- Buildings
- Construction
- Apartments

Title

- Ownership
- Easement
- Easement
- Restrictions
- Easements
- Encumbrance
- Lease etc.

Rights

- Owners
- Tenants
- Mortgagors
- Trustees
- Attorneys etc.

Parties
Markets Mature,

Land transactions more complex,

Demand on Government increases,

Cost Increase,

Maintenance.
Context Real Property (Cont.)

Land Market Interaction

Real Property Owner(s)/Right Holder(s) → Government Departments

Real Property Data Providing Security

Professionals/Organizations (Surveyors etc.) → Private Sector
ICT Enabling Framework

Consists of:

- Drivers,
- Enablers, and
- Constraints.
ICT Enabling Framework (Cont.)

Drivers:

**External:**
- Commercial Demand for Rapid Filing,
- Commercial Demand for Rapid Access,
- Public – Better Service and Access,
- Investment Demand – Emerging Economies – Second homes, Diaspora etc.

**Internal**
- Government Drive for Efficiency and Increased productivity
Enablers:

- Spatial data as the integrating layer,
- Internet and Web Services,
- PKI,
- Modernized legislation i.e. digital signatures etc.,
- Data Standards such as MISMO, LandXML etc.,
- Data Models,
Enablers (cont):

- N-Tier environments – J2EE and .NET,
- Business Logic and Workflow,
- Data Replication tools,
- Disconnected environments,
- History and archive,
- Lower cost hardware, and
- Database Management Systems (lower cost, more choice).
ICT Enabling Framework (Cont.)

Constraints:

- Lack of funding,
- ICT not viewed as infrastructure i.e. roads, power etc.,
- Lack of skilled personnel,
- Institutional complexity and inertia,
- Poor data quality,
- Outdated Legislation,
- Lack of adoption of data standards – SDTS/FGDC e.g.,
- Resistance to change, and
- Costs of maintenance.
New Models:

- Executive Agencies, i.e. HMLR, OS, and NLA in Jamaica (charge for services and data for recovery),
- Public/private i.e. web hosting, royalty schemes,
- Concession models,
- Technology Funds i.e. TTF in Virginia, Ga, La, etc.
Case Studies (Jamaica and Spotsylvania County, Va)

Common Overview

- Disparate definition of a cadastre
  - Lack of a common parcel identifier
  - Various Numbering Systems
- Large Volume of Paper Records,
- Low level of records integration in previous computer systems,
- The requirement to have minimal negative effect on normal business operations during implementation,
- Limited previous experience of senior staff in large system implementations,
- Low level of computer knowledge in general staff,
- Legislative framework
  - Need to implement initially in current outdated system
  - Flexibility required for future changes
Registration of Titles Act established in 1889 – Torrens Based Registry

Registration of Titles in one central office
- Approximately 500,000 registered Titles
- 50,000 transactions per annum
- 6,000 new certificates of title

Land Surveyors Act
- 15,000 survey plans per annum

Land Valuation Act for Property Taxation
- 690,000 taxation parcels of Land

Deeds System of common law titles also exists

Spatial Fabric – CADINDEX and CADMAP

Case Studies - Jamaica
Government Recognized

- Inability of current title registration system to effectively handle current volumes and forecasted demands,
- The need for a National Spatial Data Infrastructure to provide a foundation for economic development,
- The need to accelerate the regularization of land ownership in Jamaica, and
- The need for a modern institutional framework.
National Land Policy

“July 1996. Policy recognizes the finite nature of Jamaica’s land resources and the need to correct decades of indiscriminate use and poor development practices. The policy aims to complement socio-economic development plans and programmes including poverty eradication, whilst challenging and seeking to remove inefficient, onerous and outdated legal, administrative, management and other barriers.”

Public Sector Modernisation

“In 1999 under a Public Sector Modernisation Project government moved to establish Executive Agencies that were more customer focused and performance based on terms of management. Guided by the National Land Policy, one of the agencies created in 2001 was the National Land Agency (NLA) under the Ministry of Land and Environment. The NLA brought together the core land functions of Government under one roof, and includes: Land Titles; Survey & Mapping; Land Valuation & Estate (Crown Land) Management.

Modernization of Information Technology – Use Enterprise solution to drive Business Process Change.

The registration procedure is workflow-driven and specified by business rules,

Workflow is a scenario for performing daily operations under predefined procedures and strict security rules,

Business rules define how the workflow should proceed,

Each type of transaction may have its own workflow with necessary number of steps and links between them, and

Workflows are configurable through definable business rules logic.
Jamaica – Workflow Defined

 Assessment – get, review documents from party and create new lodgment,

 Cashiering – accept payment for registration,

 Initial Verify – conduct legal review of documents,

 Scan – scanning of incoming documents,

 Index – enter information about transaction into property register,

 Cadastre – perform cadastre operation i.e. subdivide, union, create parcel diagram etc.,

 Final verify and Sign and Seal - check, print and sign deed document,

 Final Scan – scanning of outgoing documents, and

 Delivery – deliver new documents to the applicant.
Jamaica - Registration Scenario

Applicant

Assessor & Delivery (LRS)
- Fill-in Application
- Comment Rejection
- Assessment
- Print Acceptance Notice
- [APPROVE]
- Get Receipt and Notice
- Delivery of Rejected
- Get Documents

Cashier (Cashier)
- Cashiering
- Print Receipt
- Delivery

Scan Operator (DSS)
- Scan Lodgement
- [APPROVE]
- Scan Registered
- Commit
- Delivery

Indexer (LRS)
- Initial Indexing
- Cadastre Workflow
- Final Verify
- [Reject]
- [Approve]
- Printing
- Seal and Sign

Surveyor (ArcCadastre)
- Initial Verify
- Write Rejection Letter
- [Reject]
- [Approve]

Registrar (ArcCadastre, LRS)
- Get Documents
- Delivery

Head of Department (Manual)
- Applicant

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Enterprise Solution (LRS) Enables enabling:

- Job and staff tracking,
- Concurrent processing,
- Fully controlled access to field level,
- Backfile Integration (digital archives), and
- Full Automation of ALL office registration activities.
Jamaica Workflows (Transaction Types)

**In-Take**
- NEW CT
- MEMO
- SEARCH/
- PHOTOCOPY
- PLAN EXAMINATION
- POWER OF ATTORNEY
- CERTIFIED COPY
- CAVEAT
- CASHIERING
- ASSESSMENT
- DISPATCH
- DOCUMENT SCANNING

**Begin**
- From Assessment
- Send to Cashiering

**Send to Cashiering**
- From Cashiering
- Send to Document Scanning

**Send to Document Scanning**
- From Document Scanning
- Send to Mini-Registry

**SEARCH**
- CERTIFICATE
- STAY ORDER
- CAVEAT AGAINST REGISTRATION
- Void Invoice and Drop Assessment
- Void Invoice and Drop Assessment
- STRATA PLAN
- DELIVERY

**End**
- DELIVERY OF REJECTED
- DEPOSITED PLAN
- INITIAL REGISTRATION
- CAVEAT
- CAVEAT AGAINST REGISTRATION
- POWER OF ATTORNEY
- DISPATCH
- END
- DEPOSITED PLAN
- INITL REGISTRATION
- CAVEAT
- CAVEAT AGAINST REGISTRATION
- POWER OF ATTORNEY
- END

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**LRS Workflows**
- New Certificate
- Primary Registration
- Encumbrances
- Caveat
- Power of Attorney
- Deposit of Plan
- Plan Examination
- Search
- Search Certificate
- Certified Copy
- Manual Processing (for transition period)

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Jamaica Simple Workflow

Encumbrances Workflow

- Drafting Memo
- Printing Memo
- Sign and Seal
- Scan Certificate
- Delivery
Jamaica Complex Workflow

New Certificate

- New CT Indexing
- Plan Checking
- Newspaper Advertisement
- Final Fees Payment
- New CT Preparation
- New CT Editing
- New CT Printing
- Sign and Seal
- Scan New CT
- Delivery

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Jamaica – Control

Applications queue at different stages

Application Processing History
Functions: fee calculation, receipting, and accounting of fee transactions at the Land Registry.

Increased security, and

Increased Fee Generation.
Jamaica - Access

- Easy access to information, and
- Up to date Title data.

Certificate of Title

Volume: 1102 Folio: 217
Status: Active
Registration Date: 05-Sep-2003

Property

<table>
<thead>
<tr>
<th>PID</th>
<th>Type</th>
<th>Status</th>
<th>Name</th>
<th>LotNo</th>
<th>Postal Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10384441</td>
<td>parcel</td>
<td>active</td>
<td>ENSOM CITY</td>
<td>678</td>
<td>SPANISH TOWN P.D</td>
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</tbody>
</table>

Ownership

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Owner</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>1247161</td>
<td>GRAY, ALANA</td>
<td>225 SOUTH 12TH AVENUE, MT. VERNON, NEW YORK 10550</td>
</tr>
<tr>
<td>1247161</td>
<td>LAMONT, GERTRUDE</td>
<td>32 FOURTH STREET, KINGSTON 13</td>
</tr>
<tr>
<td>1247162</td>
<td>JAMAICA NATIONAL BUILDING SOCIETY</td>
<td>10 GRENAADA CRESCENT NEW KINGSTON KINGSTON 5</td>
</tr>
</tbody>
</table>

Instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Type</th>
<th>Registration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1247161</td>
<td>TR - Transfer</td>
<td>05-Sep-2003</td>
</tr>
<tr>
<td>1247162</td>
<td>MD - Mortgage</td>
<td>05-Sep-2003</td>
</tr>
</tbody>
</table>
Jamaica - Reporting

- Staff productivity,
- Financial Statistics, and
- Performance Statistics.
Subdivision of a property invokes operations to be performed in the cadastre office.
Jamaica – Results

- Transaction times cut from 60 days on average to 15 – goal is 3 days turn around by 2006,
- Business processes reduced from more than 100+ to less than 50 in daily use,
- Customers know exactly where their application is,
- Much closer to creating a ‘one stop shop’, and
- Fee Collections are up 250%.
Case Studies - Spotsylvania County, VA

Problem Set:
- Population 110,000,
- 35,000 land parcels,
- Growing rapidly - dormitory of metro Washington DC
- Recorders office was 4 months behind,
- Older technology – not flexible,
- Low level of technology skill and awareness in staff,
- Deed legacy system data not integrated,
- Not integrated with rest of County land processes, and
- Public and commercial sector increasingly frustrated.
Case Studies - Spotsylvania County, VA

Solution:

- Use TTF,
- Replace older legacy system more flexible open system,
- Force use of the VA Cover Sheet Agent – level 1 E-filing,
- Integrate backfile legacy data,
- Integrate with Assessors and planning office through Novalis LRF,
- Use Web Delivery,
- Use E-Filing (ERX – ILS and ACS),
- Provide extensive training,
- Recordings – now live – no backlog,
- Legacy data converted back 40+ years and work ongoing, and
- Staff productivity greatly increased.
Workflow

- User roles,
- Flexible workflow,
- Controlled ‘jobs’.
Case Studies - Spotsylvania County, VA

Architecture
Case Studies - Spotsylvania County, VA

- Remote Backup and/or “Mirror” Storage
- Microfilm production shop (Archive)
- Clearinghouses for bulk data redistribution (portals) and data mining
- ERX – E-Filing – 30 second recording.

Data Express Diagram

Production Server

IIS Server

Public Server

Data Express Publisher

Data Express Subscriber

Folder “PROD-PUB”

Folder “PUB-PROD”

Web (virtual) Folders

Local Folders(s)

Put XML Files

Get Confirmation

Get XML Files

Put Confirmation

Configured to use HTTP(S) Driver

Configured to use File System Driver
Case Studies - Spotsylvania County, VA

Intranet Access

- 100+ intranet users daily,
- 12 million records,
- 750 transactions daily,
- and
- 40+ years of data.
Data Replication

Live to internet
Every 3 minutes.
Web Access

- See the parcel on map,
- Review parcel information,
- Simple map view functions,
- See all registry data,
- Fee based subscription,
- Royalty Sharing, and
- ‘One stop shop’.
Case Studies - Spotsylvania County, VA

Cover Sheet Agent – E-Filing Level 1

- Authorized Access per subscription
- Set personal profile (save processed data and define default fields values)
- Generate Cover Sheet
Case Studies - Spotsylvania County, VA

Cover Sheet Agent for Commercial/Public Use

Parcel Reference Screen

Verification Screen

Validate Coversheet
This Coversheet is not filled properly:
- Grantor State has not been entered (warning)
- Grantee Zip has not been entered (warning)
- Recording Paid For By has not been entered (warning)
- Return Name has not been entered (warning)
- Return Address has not been entered (warning)

Return City has not been entered (warning)
- Return State has not been entered (warning)
- Return Zip has not been entered (warning)
- Parcel 1: State has not been entered (warning)
- Parcel 1: Zip has not been entered (warning)
Case Studies - Spotsylvania County, VA

Cover Sheet Agent - Output

- Printout Preview
- 2D Barcode Data Coding
Thank you

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