



# Large Scale Document System:

*Effective Public Sector Knowledge Management System*

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**NIIE 2010 – Industrialisation and National Development**





**1. Definitions**

**2. The Problem & Issues**

**3. Methodology**

**4. National Development Issues**

**5. Challenges & Discussions**



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# Definitions

## Document Management System



A computer system (or set of computer programs) used to **track** and **store** electronic documents and/or images of paper documents

# Definitions

## Content Management System



A collection of **procedures** used to manage **work flow** in a **collaborative** environment.



# Definitions

## Knowledge Management System



A range of **strategies** and practices used in an organisation to identify, create, represent, distribute, and enable adoption of **insights** and experiences.



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# The Problem

## Academic Institution



- Faculties, Institutes & Centres** – Intellectual Properties
- Personnel Services** – Human Capital Mgt Records
- Registry** – Student Life Cycle Records
- Bursary** – Financial Management Records
- Physical Planning** – CAD/CAE Drawings, Designs
- Works Services** – Product Literature, Service Manuals
- Academic Planning** - Curricula
- Medical Services** – Health Services Records, Reports
- Student Affairs** – Hostel Records, Students Relations
- Library**- Books, Journals, Publications
- Internal Audit** – Financial Analysis documents
- Legal Department** – Agreements, MOUs
- Central Stores** – Logistics Records
- General Administration** – Correspondences
- Public Relations** - Presentations



# The Problem

## National Documents



**Rule of law** - legislative records, court records, police and prison records.

**Accountability to its citizens**, - policy files, budget papers, accounting records, procurement records, personnel records, tax records, customs records, and electoral registers, property and fixed assets registers

**Protection entitlements** - pension records, social security records, land registration records, and birth/death records.

**Services provisions for its citizens** - hospital records, school records, and environmental protection monitoring records.

**Government's relationship with other countries** - foreign relations and international obligations, treaties, correspondence with national and international bodies, loan agreements, etc

# The Issues

## Business Process



*How do documents fit into the overall business process?*

## What is the Business Process Flow?

- Are documents created or required at certain steps in the process?
- Which business objects are documents associated with?
- What are the documents and what are their significance?

# The Issues

## Search Methodology



*How do we want to search for documents?*

**What are the attributes of the document?**

- Standard attributes – Description, Owner, Responsible Lab/Office
- Additional Attributes – Application, Release
- Full Text Search



# The Issues

## Lifecycle

### *Define Lifecycle of Documents*

### **What are the steps in the lifecycle of the document?**

- In Work
- Pending Approval
- Approved
- Released –No more change-Released version remain as history



# The Issues

## Change Control



*What is the change control process?*

**Are updates controlled through a change control process?**

- Capture reason for change, element of workflow, and digital signature for release
- Provides a complete history of when and why a document was updated
- Important for documents that are critical, such as Personnel Records – Date of Birth, Promotions

# The Issues

## Approval Process



*Is there a formal approval process?*

**Before a document is officially released, does it go through a formal approval process?**

- Example – Change of Student Fees
- Facilitated through a workflow process
- Might require digital signature
- Formal approval results to a released version of document with record of the approver
- Further change to document must be by a new version



# The Issues

## Security



*What are the security requirements?*

**What roles in the business are allowed to change each document?**

- Consider status for changes – In Work seen by select group and Release seen by all.
- SAP provides complex set of conditions used to control access – document type, status, authorisation group

# The Issues

## Application Files



*What type of application files will be stored?*

**What output file of a specific application is stored?**

- Microsoft Word, Adobe Acrobat, Autodesk AutoCAD
- Application configured to behave in a certain manner when associated file is launched for display or change

# The Issues

## Versions & Revisions



*How are versions and revisions used in the business?*

## What do the term Version and Revision mean to the Business

- Version is a separate instance of a document that has its own status such as In Work or Released. It is a snapshot in time
- Revision level is assigned to a document version and is associated with a release state. Represents a major change
- For each document you can store multiple versions. With each version, you can assign a revision identifier



# The Issues

## Multi-Languages



*Do you need to support searching and maintenance in multiple languages?*

**Maintain some attributes in multiple languages?**

- Attribute Description could be maintained in English and French
- Capability to maintain entry, display and search attributes in multiple languages

# The Issues

## Size



*What is the volume and size of documents to be stored?*

**How large is document to be stored?**

- Infrastructure requirements to be considered
- Size Content Server appropriately, say 10 TB
- Size of each file help in Network Sizing, say 2Mbps
- Document consumers may be in a number of different geographic locations – Require Cache Server

# The Issues

## Location of Users



## *Location of Creators vs Consumers*

### **What are the different locations of creators and Consumers?**

- Creator is someone who generates and stores document in the system
- Consumer is someone who searches and displays documents
- For large number of Creators install Content Server at that location
- For large number of Consumers install a Cache Server
- This helps reduce the impact on the performance of WAN



# The Issues

## Retention



*Are there document retention requirements?*

**How long should document be stored or made available based on business and legal requirement?**

- Physical Planning CAD, building design retained for life
- How to handle document when retention period expires, say archived or deleted
- What does the national & international law require?

# The Issues

## Neutral Format



*Do documents need to be converted to a neutral format for long term retention?*

**What neutral format should be used?**

- Neutral formats such as PDF or TIF
- Applications have life, eg doc and docx
- Conversion is carried out automatically by SAP DMS when the status of released is reached
- Conversion Server can be installed



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# Methodology

## 1. Identification & Analysis



Document	Quantity
Human Capital	3 million
Student Life Cycle	5 million
Intellectual Properties	3 million
CAD & Logistics	1 million
<b>TOTAL</b>	<b>12 million</b>

# Methodology

## 2. Digitisation



- ❑ **Fast Scanning**
- ❑ **'*rasterises*'** the records to become searchable
- ❑ **Book Marking**

# Methodology

## 3. Content & Knowledge Management



❑ **Search and Classification/taxonomy**

❑ **Content Servers – Document generation**

**Cache Servers** - improving search performance by consumers



# Methodology

## 4. Data Warehousing



- ❑ **Vault Secure Storage**
- ❑ **Backup & Recovery**



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# National Development

## National Development Issues



- Good Governance**
- Equitable Judicial System & Enforcement of Human Rights**
- 
- Accountable Financial System**
- Effective and Transparent National Development Process**





# National Development

## Benefits

- Secure storage
- Easy retrieval
- Excellent search capabilities
- A controlled environment for updates
- Complex security rules to control access
- Increased visibility of key documents
- One source and one set of rules for managing documents
- Reduced time and effort
- Ability to maintain document history to meet legal requirements





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# Discussions

## Challenges



- ❑ There is a **low awareness** of the role of records management in supporting organizational efficiency and accountability.
- ❑ There is an absence of **legislation** to enable modern records management practice.
- ❑ There is an absence of core **competencies**.
- ❑ Overcrowded and unsuitable **storage** of paper and electronic records;
- ❑ Absence of purpose built record centres such as Content and Cache Servers
- ❑ Absence of a dedicated **budget** for records management
- ❑ Poor security and **confidentiality** controls
- ❑ Absence of vital records, **disaster recovery** and preparedness plans
- ❑ Limited **capacity** to manage electronic records.





# Discussions

## Actions

**Capacity Building**

**Legislative Structures &  
Budgets**

**ICT & Power Infrastructure**



*Thank You!*

