Critical Factors for the Success of Large Government Digitization Projects
INTRODUCTION

Successful e-Governance initiatives are focused at ensuring better services for the citizens by ensuring convenience, efficiency, transparency & reliability. Good governance demands reduced duplication of work, reduced communication costs, increased transparency in functioning of various government departments, and faster citizen services. Digitization of documents is one of the key requirements for all e-Governance projects.

Recently, Government of India has taken aggressive steps towards streamlining government processes and digitizing relevant information. The digitization of land records, court cases and UID project are some of the key government initiatives taken.

This white paper is aimed at highlighting the key challenges and critical success factors involved in ensuring success of a digitization project. It talks about some of the successful measures that government organizations have taken to address these issues. The paper discusses the following topics:

- What are the major digitization challenges and how to address these challenges?
- Why a Document Management System is a must for implementing a web enabled, secure and scalable repository of digitized documents?
- How technology can be used to produce certified print copies of documents and certificates?
- A landmark Case Study where 7 billion documents have been successfully digitized and used by 25000 business users

WHY DIGITIZATION IS A NECESSITY

Citizen-centric services such as Land Record Registration, Driving License Issuance, Property Registration, Trade License Issuance etc., involve extensive handling of documents. These documents are critical for effective service delivery. Quick delivery of services through multiple modes/outlets is possible only if the documents that are necessary for making decisions are available immediately.

Additionally, at times for availing a particular service a citizen may be required to fill in an application form and furnish supporting documents as proof of his/her identity, date of birth or address. All these documents, once submitted by the applicant, should be archived electronically for future reference. Documents once digitized and stored in central archive, can be made available any time, anywhere to all key stakeholders. This gives impetus to the whole decision making process and results in faster delivery of services to citizens.

A central repository also acts as a single source of information to meet all compliance guidelines.
ADDRESSING THE DIGITIZATION CHALLENGES

• Ensuring Quality of Digitization output

A large e-Governance project involves scanning of millions of documents. Practically only 2-5% of these documents can go through direct Quality Check. At a later stage if an error is identified in a document, it may challenge the usability of the document. For example there can be situations where a court case file is retrieved years later, and it is found that the investigation report is not properly visible or judgment order has not been scanned completely with some pages missing from it. This makes it critical to address any such issues during the digitization process itself.

There are various possible errors that can occur in digitization such as, Folded Corner/Edges, Skew, Readability, Too dark or too light, Photo on Black & White image, Improper Margin, Punch mark, Black edge, Orientation, Size of File, Compression, Format, Resolution etc

With advancements in technology, automatic quality checks are possible for such errors. Many of such issues can even be corrected automatically. Software based Document Quality Analysis can play a vital role in the digitization process to certify the output. In cases where automatic corrections are not possible (such as folded corner) it can detect error and raise exception.

Such measures along with strong audit process, maker/checker workflow ensures the quality of the output that goes into archive. Today, such issues are left to the discretion of vendors. Since a large digitization activity involves multiple vendors, the problem gets multiplied.

If we look at any large successful digitization initiative, it is observed that each of these initiatives follows a similar pattern. All technology platform decisions, process definition and control measures are typically defined and decided by the concerned department and then uniformly governed to the vendors. Towards the end of this white paper we have included a case note that substantiates this finding.

• Ensuring accuracy of Indexes for quick retrieval in future

Digitized documents should be stored in the archive along with proper search indexes(For example court case files should be stored and indexed with parameters like case type, title, petitioner etc.). This is to facilitate quick retrieval of required documents in future. Quality control should also focus on accuracy of these indexes. This can be done though combination of control measures such as format validations, checking accuracy against master database and audit processes.
• Ensuring Authenticity of Important Documents

Though the quality of scanning output is very important, a good quality output does not guarantee the authenticity of a document in the digital repository. Any ambitious plan for large scale digitization and moving of physical documents to a remote record management facility is incomplete without sufficient measures to ensure authenticity of digitized documents. When you use an electronic copy of the document or reproduce a print copy from the electronic version, you want to be very sure about the authenticity without having to refer the original document.

One solution that has been successfully used to address this issue is effective usage of Digital Signature. Organisations have used two step digital signatures to ensure authenticity:

• Applying Digital Signature of the vendor’s officials after vendor’s verification and finalization step
• Applying Digital Signature of the organization’s officials after the Department’s quality check step

IT Act and laws are now paving way for having digitally certified copy as an acceptable replacement of the original paper for various legal purposes. Having a digitally certified repository enables organizations to leverage this in future to save time and cost involved in handling original paper copies.

• Adherence & Compliance with open standards for long term archival

Documents in the archive may be needed by other applications and media even after 30 years. Long term archival of documents should ensure that these documents can be retrieved and rendered with a consistent and predictable result in the future. Open standards such as PDF/A, which is an archiving and preserving standard, should be used to ensure standardization and consistency.

DIGITIZATION PROJECT IS INCOMPLETE WITHOUT DOCUMENT MANAGEMENT SYSTEM - THE ENABLER FOR LONG TERM ARCHIVAL

Today, less thought is given to what happens to the document after the digitization is completed. In some cases, these are handed over on a DVD or Disk, which creates silos of information. These are critical government records and, from a long-term perspective, should be centrally archived in a secure and well-defined manner for subsequent reference.

DMS is a must for long term archival, without which several important benefits of Digitization will remain unachievable.

Let’s look at some of the key aspects that make it essential to use a comprehensive DMS for storage, archival and retrieval of these government documents.
• **Web Enabled Centralized access to the digitized documents**

As discussed earlier, electronic access to documents is critical for effective delivery of services. These services are delivered through widespread outlets such as CSCs (Common Service Centers). Digitized documents when centrally stored in a Document Management System become easily and quickly accessible through web to the agents, citizens and government officers. This creates a basic infrastructure for delivery of services through multiple CSC outlets.

• **Secure Access to the Documents**

Digitized documents in the Document Management system can be classified as per the required hierarchy of departments, sections, field offices etc. System provides secure access to the documents among the users. For example a document that belongs to a department can only be accessed by users of the same department with restricted access from outside the department. There are some confidential documents that should be accessible only to limited users.

Setting up such secured access policies in not possible without Document Management system

• **Scalable & Manageable Archive of documents**

When we talk about any citizen oriented initiative in a country like India, the volumes inevitably become countless. It is practically impossible to create a centrally organized archive of such a large volume of documents without using a proper Document Management System.

A Document Management system addresses all current and future requirements of scalability and becomes a central point to put all control and measures for record management and housekeeping policies.

• **Access requirements through other applications**

Making digitized content available through core applications, as an integrated record or a transaction, accelerates the decision making process. For example a user working in Land Record Management Application, can access all related document to a particular record from within application. He doesn't have to use two different systems to get complete information.

A modern Documents Management System gets connected to multiple applications and delivers content through the application to the user seamlessly.
• Efficient Physical & Electronic Records Management

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Documents need to follow a proper classification structure and well defined metadata and retention rules to ensure compliance with governance guidelines and standard operating procedures (SOPs).

It is essential to keep track of these documents during their initial physical movement for processing, digitization and then during transit to the Record Room. It is also essential to keep track of their location in the Record Room for quick retrieval of the physical documents.

The documents that are logically related, such as the documents related to a particular case, are always required to be retrieved together. The real challenge is faced when as part of historical scanning the original set of documents gets scanned and moved to a particular storage location, while any new related document is stored at a different location. At the time of retrieval all such documents need to be brought together.

This can be done through a Document Management System with the capability of tracking physical documents.

TAKING A STEP AHEAD – GENERATING PRINT COPIES THAT CAN BE VERIFIED

Most of the citizen services are aimed to provide certificates like income certificate, birth certificate, land record title certificate etc to citizens. Questions are raised on the authenticity and validity of such certificates when they are issued through an electronic system, and more so when issued by a CSC.

Now, through the use of Document Management System and Digital Signature technology it is possible to address such issues. Few e-Governance projects like Assam e-District have already taken initiatives in this regard. Following are a few solutions to ensure validity and authenticity of documents:

• Water Mark on the printed copy of certificates

Certificates and documents that are printed through the system can have unique water marks to establish the authenticity of these documents.
• Request ID

1. Document Management System prints a Unique Request ID on the documents/certificates printed from the system.
2. The verifier can go to the department website and search by the Unique Request ID printed on the certificate.
3. The electronic version of the certificate is displayed on the website.
4. The verifier can compare the certificate displayed in the website with the hardcopy presented by the citizen and thereby verify the authenticity of the document.

• Digital Signature Enabled 2D barcode

The verifier is required to have an Internet Connection and a 2D barcode reader to use this option.

1. At the time of certificate printing, the Document Management System prints a 2D barcode along with the issuers Digital Signature.
2. At the time of verification, the 2D barcode will be scanned from the printed copy of the certificate.
3. The output from the scanner will be used to verify the digital signature embedded in the barcode with the one stored in the central system.
4. In case the signatures match, the system will display the electronic version of the certificate on the department website.
5. The verifier can verify the contents of the physical copy certificate with that of the certificate displayed on the website.

“IT'S NOT ONLY ABOUT DIGITIZATION OF DOCUMENTS BUT ALSO ABOUT MAKING BEST USE OF THESE DOCUMENTS”

Case Study- More than 7 billion documents successfully digitized and used among 25000 users through Document Management System

A leading life insurance company in India decided to digitize all its historical records and implemented an electronic document management system. Till date nearly 7 billion pages have been digitized and archived in the system and the records are being used by 25,000 users across the enterprise.

Solution Highlights:

• 7 billion pages digitized and archived in a span of little over 3 years
• Documents can be accessed by more than 25000 users from across 2000+ branches in India
• Vision for enabling any time anywhere service to citizens transformed into reality; a citizen may now walk into any branch of the company to avail services on his policy
Critical Factors for the Success of Large Government Digitization Projects

- Industry standard Document Management, Business Process Management, Capture and Records Management suites used to archive and manage documents
- Document Management system is well integrated with core application

Key considerations that played a crucial role in the success of the project - A learning that goes far beyond the project and is applicable to all large digitization initiatives

- Key technology platforms were chosen and procured centrally by the department
- Uniform and consistent digitization processes were defined centrally and used by all vendors providing digitization services
- Outsourcing was done only for low value added tasks such as scanning, data entry etc.
- Comprehensive monitoring, control and audit on working of outsourced processes
- Industry standard Document Management and related solutions were used for managing and hosting digitized documents

About Newgen

Newgen Software Technologies Limited is the market leader in Business Process Management (BPM) and Enterprise Content management (ECM), with a global footprint of 800 installations in over 40 countries with large, mission-critical solutions deployed at the world’s leading Banks, Insurance firms, BPO’s, Healthcare Organizations, Government, Telecom Companies & Shared Service Centers.

Newgen Software has been positioned in the Magic Quadrant for Business Process Management (BPM) and Enterprise Content Management (ECM). The company has been recognized by distinguished analyst firms like Frost and Sullivan as A ‘Hot Company to Watch for’ in their global ECM Market report, 2009 and by IDC in its exclusive report “Newgen Software: Global Leader in Business Process Management and Document Management Solutions”. Newgen is a winner of prestigious awards, such as the CNBC-TV18, “Emerging India Award 2008”.

With HSBC and SAP investment, Newgen is one of the rare product company to have backing of both leading financial and technology companies of the world. Newgen’s Quality Systems are certified against ISO 9001:2008 and Information Security Standard, ISO 27001:2005. Newgen has been assessed at CMMI Level3.