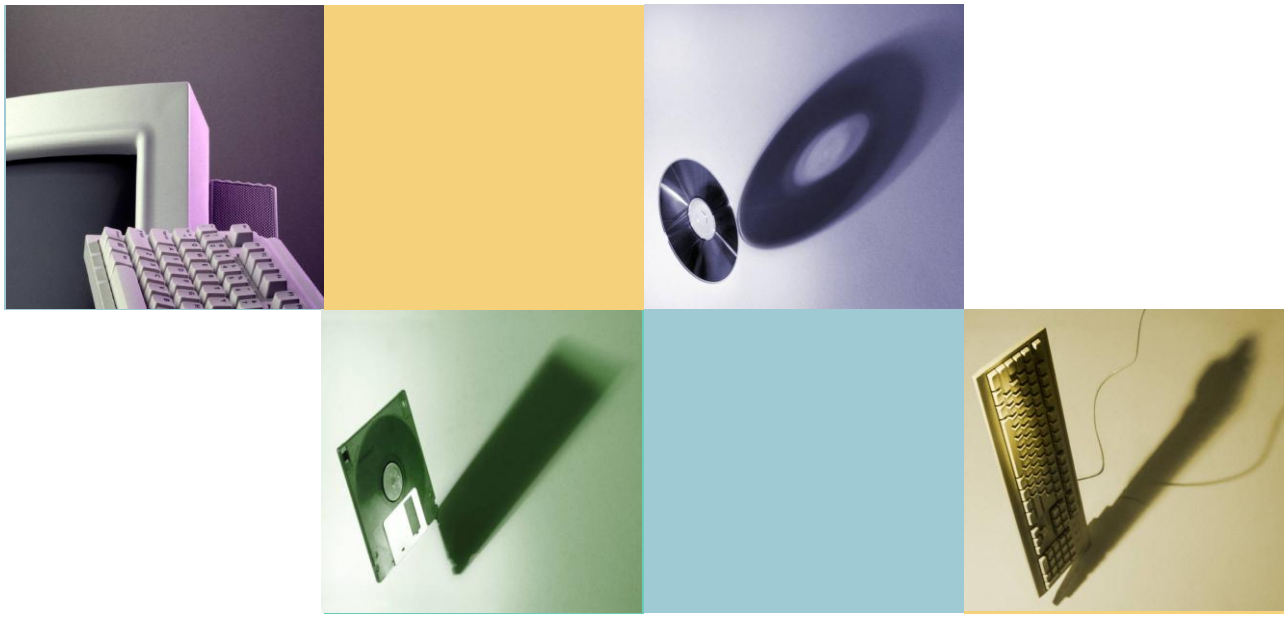
介接未來：我國電子檔案管理策略

Bridging Future: the Strategies for Electronic Records Management in Taiwan



國家發展委員會檔案管理局副局長林秋燕

Chiu-yen Lin, Deputy Director-General,

National Archives Administration, National Development Council, R.O.C.

大綱 Outline

- 我們的發展概況
  Where We Are
- 我們需要跨越甚麼
  What Gaps We Need to Cross
- 我們有何風險
  What Risks We Have
- 我們正在做甚麼
  What We Are Doing
- 我們可以再做甚麼
  What We Should Do More
- 結 語
  Bridging the Future



我們的發展概況
WHERE WE ARE

檔案與電子檔案定義
Our Definition of Records & Electronic Records

Records

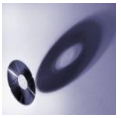
- Those text or non-text data and its attachments are filed by government agencies after completing the management procedure

Electronic Records (ER)

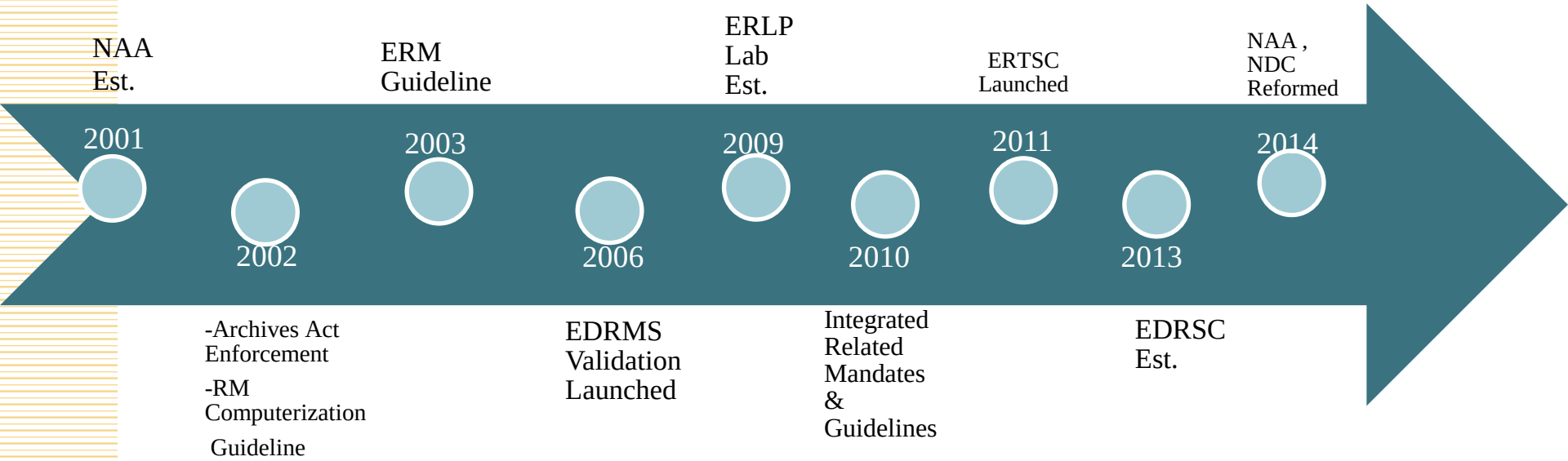
- Those text and non-text data can be manipulated by computers, and complies with our Archive Act and related regulations
- Including born digital and reborn digital(or born analog) records

重要相關政策與時間表
Critical Related Policies and Timetables 1/2

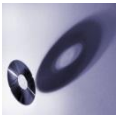
Critical Related Policies for Government


重要相關政策與時間表
Critical Related Policies and Timetables 2/2



Related Policies of the NAA


電子文書檔案管理發展
The Development of Electronic Documents & Records Management

1993-

(E)DM

Electronic Documents authorized by the legal system

2002-

RM

By Laws & Regulations

2003-

ERM

Most from printed material Digitalization

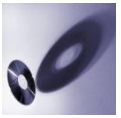
2010-

EDRM

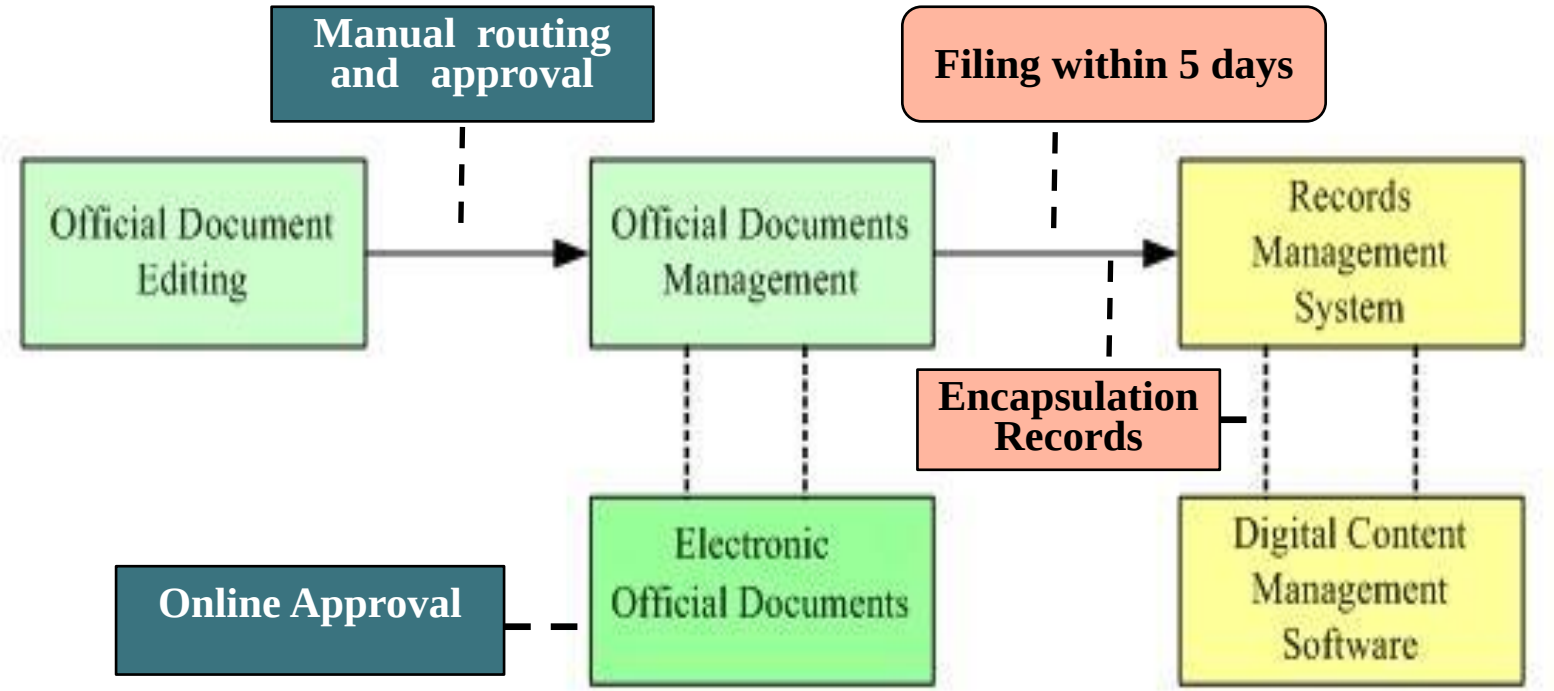
-Generated by online approval

-Integrated applications

Including Internal & Public Access

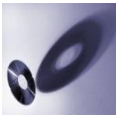




現行政府文書檔案處理流程
Government Official Documents & Records Process Flow



Official Documents Electronic Exchange Mechanism

About 49 million documents in total per year


電子化節能減紙成果
Specific Paper Reducing Indices

Documents Exchange Electronically

75%

Agencies of owning Online Approval Software

68%

Online Approval Rate

49%

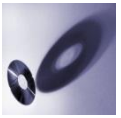
Paperless Meeting

39%

Saved Postage Fees

1.2 billion/year

Among 7,365 Government Agencies and Schools


電子檔案長期保存成果
Some Output related to Long-term Preservation

Methods

- Migration
- Emulation
- System Preservation

Tools

- PEARS(Preserving Electronic Archives & Records Suite)
- ER Toolkit
  - Electronic Verification & Viewing Tool
  - ER Technical Appraisal Tool
  - ER Transfer System

Service

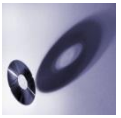
- ER Recovery
- Storage Media Destruction
- System Preservation
- Consultation



我們需要跨越甚麼
WHAT GAPS WE NEED TO CROSS

THERE ARE GAPS BETWEEN THE CURRENT AND THE FUTURE

如何跨越電子檔案的鴻溝 銜接現在及未來


機關檔案現況
Current Status of Government Records

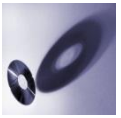
About *540 million* records now

- Paper approval format
- Reborn digital with/without encapsulation
- Online approval (born digital) with/without encapsulation
- Electronic attachments meet/not meet the format
- Obsolete analog video & tapes
- Old and new photographs, microfilms, microfiches & slides

Including or Excluding?

- Files in personal computers
- Records in core business systems
- Data existing in other types, like databases, email, webpages…

Large Quantity And Diversity May Cause Problems In Integrity, Authenticity, Accessibility


現存銜接障礙 Existing GAPS 1/3

Legacy Systems Are Incompatible with the Newer Information Technologies

- How to present these obsolete preserved electronic records using current IT?
- Does exist the feasibility of mass-scaled e-records in obsolete format using emulation technologies?
  - New users can not get used to using these out-of-date interfaces
  - Considerations of cost / performance and return rate of investment

現存銜接障礙 Existing GAPS 2/3

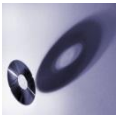
User Requirements Have Been Evolving Constantly

- Ubiquitous computation with mobile carriers instead of desktop computers
- Browser only presentation without any plugins such as html 5
- Intelligent search instead of conditional retrieval
- Application of cloud computing and Big Data technologies

現存銜接障礙 Existing GAPS 3/3

Legitimacy in Conversion

- What are exact values in electronic records?
- Content first solutions vs. Presentation first solutions
- Authenticity vs. Convenience
  - Authentication methods and validation methods
- What will be preserved in government records?
  - The message in print vs the evidence of processes (such as invisible electronic stamps or seals or graphic icons)


困難 Difficulties

Complicated E-records Sources

Different software in different agencies

- Conventional office software or specific official document editors such as different version of MS OFFICE

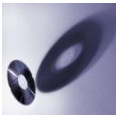
Different working environments such as operation systems and hardware

- MS 95, 98, 2000, XP, Win 7 and etc.

Obsolete standards still be preserved

- Accumulated cost of periodical migration over time
- Dilemma of loss and lossless conversion technologies
  - Compression rate vs cost
  - Resolution rate for machine or for bared eyes
  - How many pixels or colors will be sufficient?

我們有何風險
WHAT RISKS WE HAVE


風險 Risk 1/3

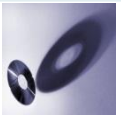
Better Technologies Always Emerge from the Latest Products

- The life cycle of an IT product has been shirking including software/hardware environment become more significantly within recent years
- Proprietary software always associate with specific formats. We never know how long will it last.
- Various of software resulted in government electronic records in number of formats
- What should we keep for the longer term?

風險 Risk 2/3

Presentation Environments Problem is Inevitable While Coping with Electronic Records Preservation

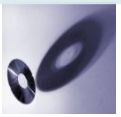
- Do the values of perseverated electronic records be embedded in original format ?
- Does not the identical appearance affect the insight value or authenticity? For instance font, stylish and resolution.
- Cost increasing is extremely high for conducting format migration constantly

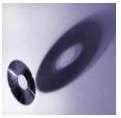

風險 Risk 3/3

Contradiction Between Authentication and Authenticity

- Authentication mechanism increase the difficulty of authenticity verification in the future for accessing preserved electronic records
- Current document routing and circulation requirements along with digital signature
  - How to validate e-records you retrieved while they are accessed with expired certificates including government certificate and personal certificate?
  - Specification and regulations have to be periodically revised that result in different encapsulation formats.


我們正在做甚麼
WHAT WE ARE DOING


中程發展計畫
Med Term Plan 1/2

Strategies of Paper Reducing and Energy Saving in Government Business Processes (2013-2016)

Encourage less printed documents • Exchange electronically • Outreach online approval	Implement paperless business meeting systems in agencies • Cut down the sources of printed materials	Modulate seamless processes from documents creation to records management • Reduce the chance to print out

E-records increasing in government agencies

中程發展計畫
Med Term Plan 2/2

Documents & Records Information Network Integrated Plan(2012-2016)

Promote paper reducing & energy saving strategy	Extend electronic documents exchange service to B & C (G2B2C)	Build an integrated cloud service environment for documents & records	Strengthen the sustainable preservation and value-added applications of records in multimedia

發展文書檔案整合系統
Develop an integrated EDRMS

Emphasize the Functionality of a Seamless Workflow of Records Management- Covering the Entire Lifecycle of Government Documents

-Documents creation

-Online document routing and making remarks (Online approval)

-Outbound and inbound exchanging among government agencies

-Internal managerial processes in limited time

-Make records filing, keeping, and disposal as automatically as possible

-Easy to provide internal use and public access

-Online transfer into the National Archives Administration

修正相關法規
Stipulate Electronic Records Related Standards

Purposes

-Unify fundamental EDRMS functional specification in details by written regulations

-Identify the baseline of function EDRMS for EDRMS developers

-Facilitate internal data exchange between heterogeneous databases

-Enact mobile approval specification

Byprouncts

-Encapsulated records created by online approval features became the majority of born digital records in government agencies.

-A dedicated browser for encapsulated records in different formats for examining digital content including remarks with digital signature and attachments.

建立整合技術雲端服務平台
Establish an Integrated Technological Platform with Cloud Computing

Provide Remote Service

Provide existing ER preservation tools for facilitating record mangers without self-maintenance

Establish an open platform to plug in with open sourced preservation related tools

PEARS (In-house developed tool kits)

ER Toolkit (In-house developed tool kits for encapsulation records)

Share software tools for reducing the cost of self development

Without individual installation

Streamline Definitions of Big Data and Open Data with E-Records

-Information in e-records will be easier to open to the public such as the government open data platform

-Support big data technology to generate extra value-added product

-Smarter access and application services

- Such as e-commerce business payment mechanism
- Concept of i-store to get what you want



電子檔案取用
Electronic Records Access 1/2

Apart from electronic records keeping, we tend to provide smarter services in accordance with the steps of current information technology evolution

Big Data

- Not just for big, but for offering better results of analysis such as
  - Trend prediction
  - Provide association and aggregation data

Open Data

- Automatically open records related information to the public
- Increase types of open data about our records and archival collections

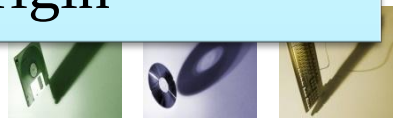
電子檔案取用
Electronic Records Access 2/2

Remote Access Without Gadget Limitation

- No restrictions for specific browsers, carriers and operation systems

Integrated With the NGIS

- Pin out those useful information in these collections of the National Archives Administration combined demographic and geography distribution, especially for those well-known theme topics
- Results of retrieved are presented along with google map to identify corresponding geographic origin



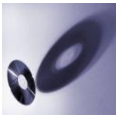
檔案人員資訊素養
IT Literacy for Records Managers(RMs)

What Is Mandatory IT Knowledge for RMs in This Digital Era?

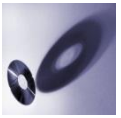
- Online survey for investigating their requirements
- Interviewing for collecting opinions

Boost the Level of Information Technology Recognition for RMs

- In-Job training about e-records
- Latest IT awareness
- Seminar, conference, workshop and field observation
- Online courses

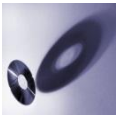

我們可以再做甚麼
WHAT WE SHOULD DO MORE


管理觀念變革
Management Conception Revolution

Staged or Integrated Management	Management by Different Media and Formats or Integrated	DM, RM, ERM, EDRM or Core Business Included
RMS only or Information Governance Architecture	Custody Oriented or Access Oriented	Information or Evidence Matter
Context Free or merged	Rescue Records After Years or Prepare at the Beginning	Training for records managers only or for whole Staff

WE NEED A HOLISTIC CONCEPTION REFORM!!

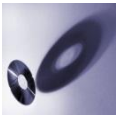




服務觀念變革 Concept of Archives 3.0

Interactive Access Service	• Share and collaboration
Customized Services	• Purge useless information • Proactive archive information push
Better Data Analysis	• Better than big
Smarter Search Mechanism	• Association and aggregation

Archives 1.0 was about stuff → **Archives 2.0 is about archivists** → **Archives 3.0 is about people**

(Source: Kate Theimer, 2011)

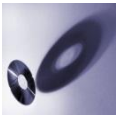

技術持續發展
Keep Developing ER Technology

Enhance Technological Treatments for E-Records Preservation

- Provide different feature modules for loading the integrated platform
- Implement the concept of i-store for users, and then put more useful tools on the shelf

Construct the Digital National Archives

- Since born digital government records are just bursting, It will be the important part of collections in the National Archives in the near future.
- Online transferring or cloud management

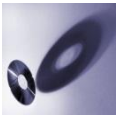

建構資訊能力 Build Capabilities for Future

Develop Series of Training Courses By Demand

- Outreach e-records managerial skills to tell them what they will need at present and near future
- Formulate the consensus & knowledge about records and archives to government staff

Extend the Range of E-Records Related Services

- Public sectors
- Enterprises
- Individuals


結　語
BRIDGING THE FUTURE

最終策略目標
THE ULTIMATE TARGET OF OUR STRATEGIES

Integration

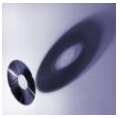
Make (electronic) records management is easy for all levels of records managers in government agencies

Effectiveness

Improve productivity of processing government (electronic) records while ensuring information security

Accessibility

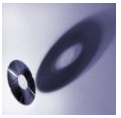
Remain the quality of government (electronic) records management related services.


實務優先性 Practical Priorities 1/3

The First Priority Is Government Records in Official Document Formats

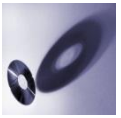
- Facilitating methods of conducting online approval and circulation remarks using digital signature by government certificate such software certificate (MOICA) and NFC (near field computations) solution.


實務優先性 Practical Priorities 2/3

Develop Seamless Workflow for Government Agencies

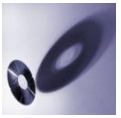
- Simplify necessary processes
  - Effectiveness / Efficiency
- Maintenance cost reduction
  - A common platform for sharing useful resources


實務優先性 Practical Priorities 3/3

Extend the Functions of EDRSC

- Play multiple roles in research, experiment and service
- Enhance the integrated platform for supporting more services with cloud computing
- Develop a risk assessment framework for government records including all media & formats
- Provide an interface to connect RMS and organizational information governance architectures

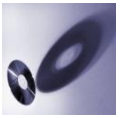

結語 Conclusion

It is not an easy work for us

- Need more qualified human resources
- The matter of budget always exists

There is no remedy to cure all ills regarding these problems of electronic records management at this moment

- We enthusiastically need your participation and contribution for this topic.


感謝聆聽，敬請指教

THANK YOU FOR YOUR PATIENCE