InterPARES 3 Project

International Research on Permanent Authentic Records in Electronic Systems

Challenges and Strategies for Managing Digital Records in a Public Organization: Findings from the TEAM China Case Study

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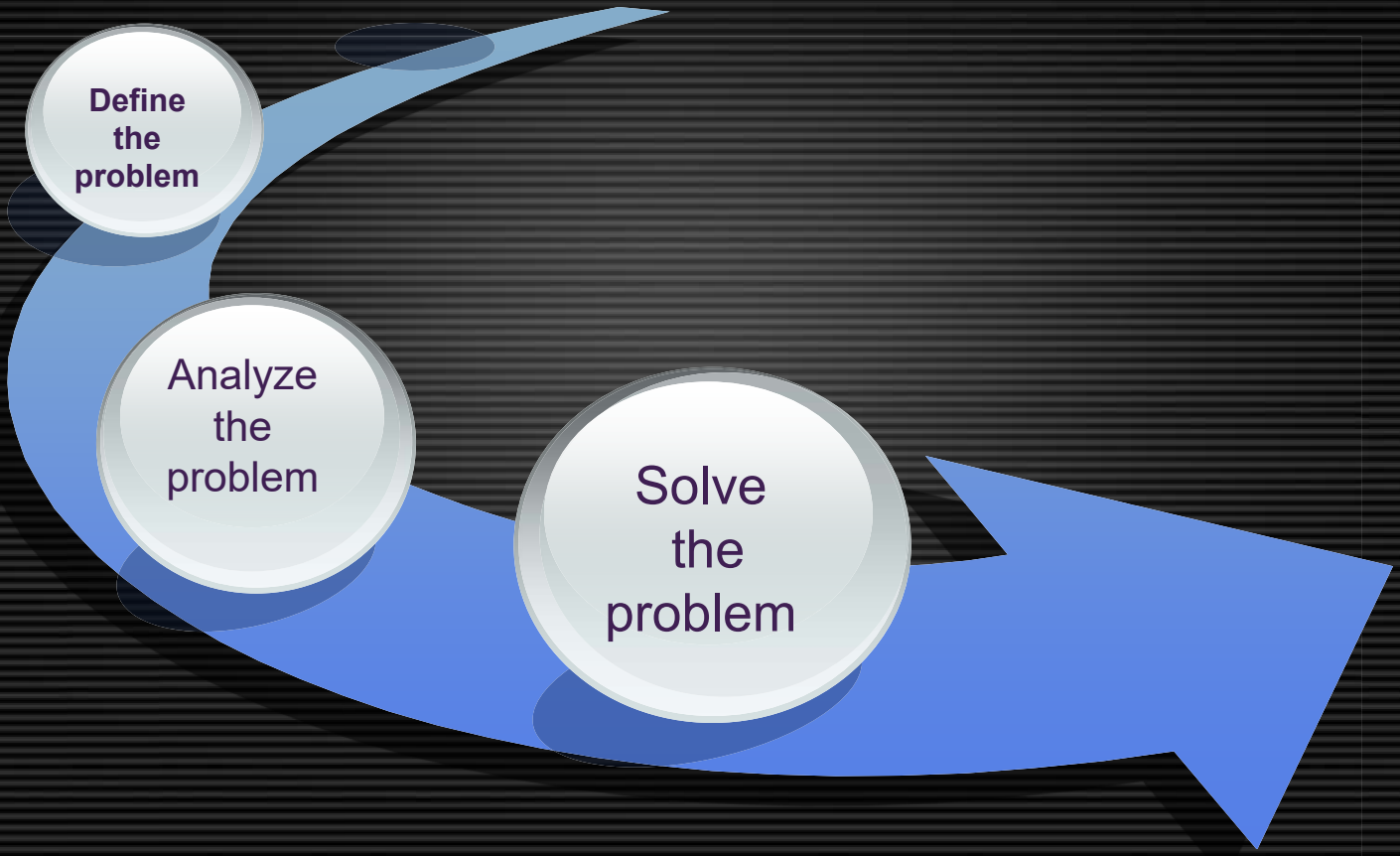
Guide by



Introduction : Brief introduction of the Test-bed Partner

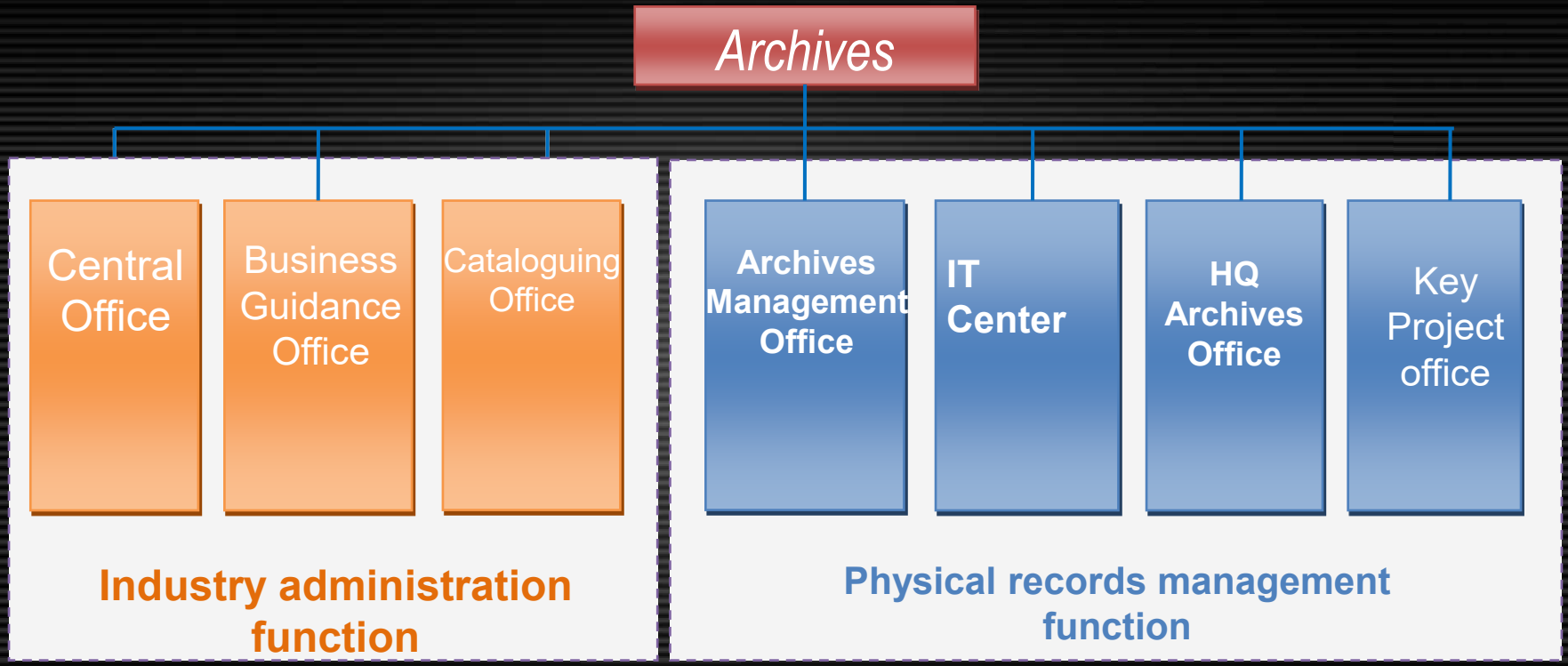
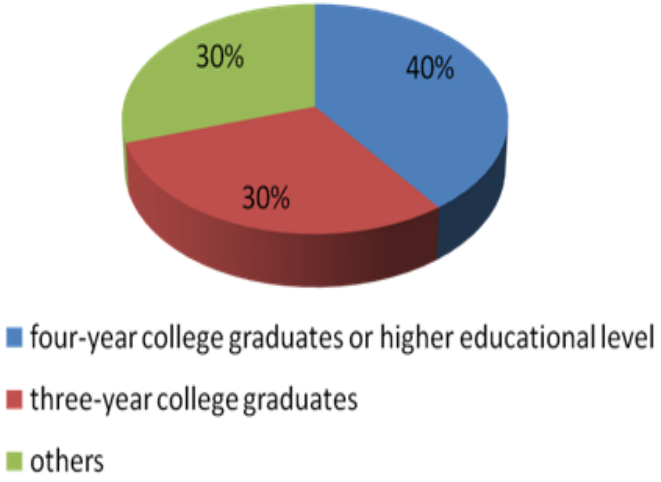


Figure 1. Organizational structure of the CASIC Archives

Introduction : Brief introduction of the Test-bed Partner



ratio of middle and advanced rank job titles to all staff members	80%
ratio of full-time employees to external experts	1:1
ratio of male to female	1:1
average age	45

Figure 2. Talent structure diagram of the CASIC Archives

The creation of digital records

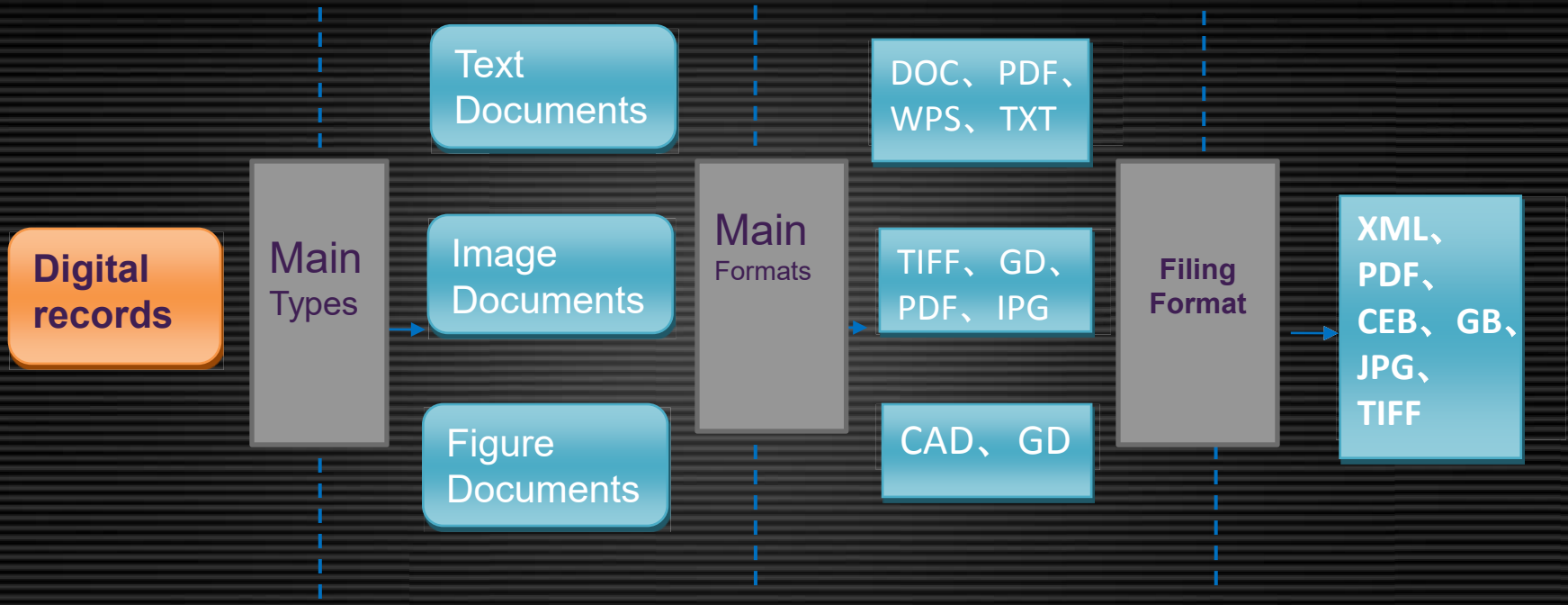


Figure 3. CASIC Archives digital records types and formats

Introduction : Current Status of Management of the Digital Records of the CASIC Archives

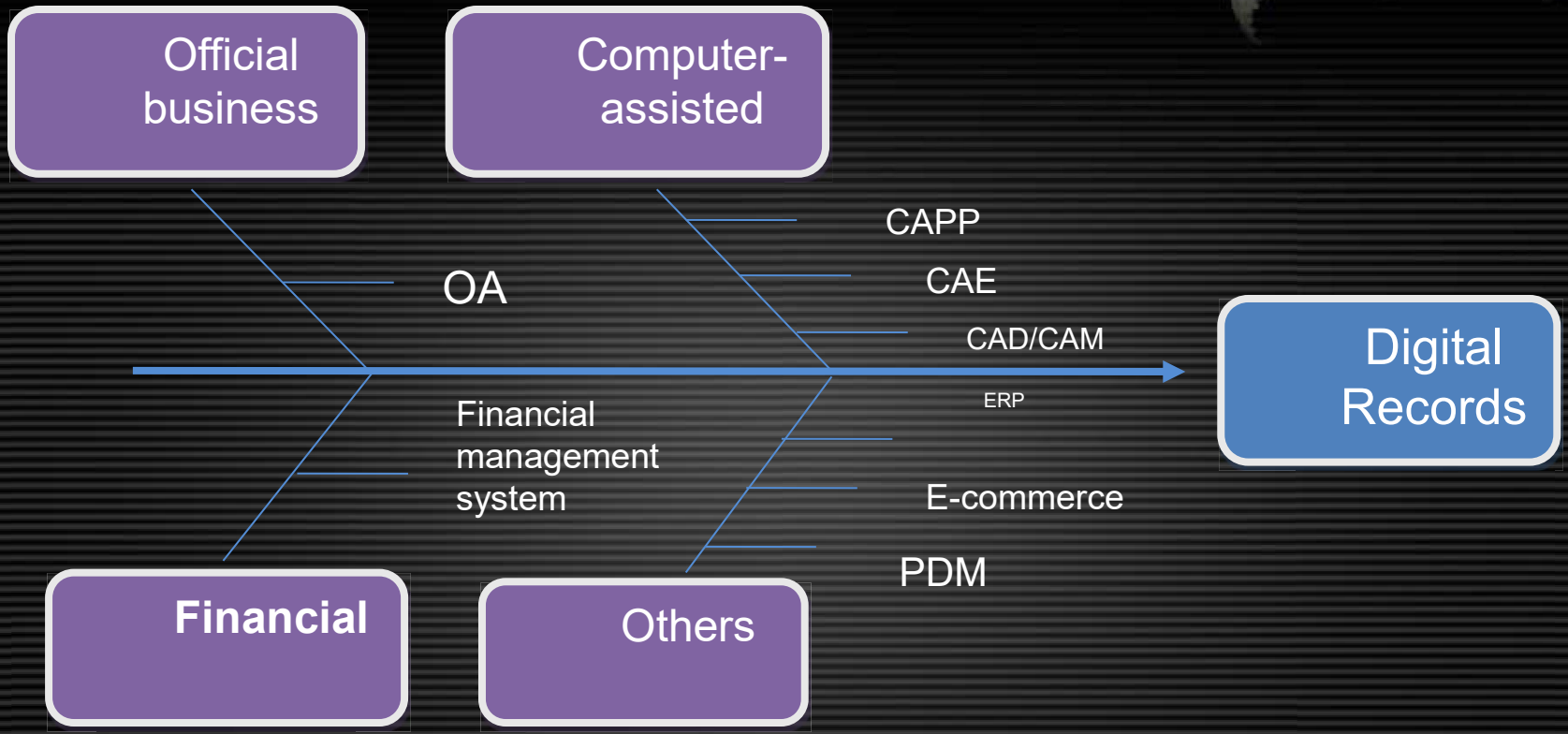


Figure 4. The production sources of digital records in aerospace industry archives

Introduction : Current Status of Management of the Digital Records of the CASIC Archives

- The construction of digital records management system

Name	Date established	Main function	Applicable scope
Management Methods of Aerospace Industry Digital Records	2001	Establishes the management principles, requirements and methods of aerospace industry digital records	**Management of aerospace industry electronic official documents and files**
Requirements for Integrated Management of Aerospace Industry Digital Official Records	2006	Establishes the general principle, process and metadata requirements of integrated management of aerospace industry electronic official documents	**Management of aerospace industry electronic official documents and files**
General requirements for Aerospace Digital Program Document Archives	2006	Establishes the requirements for the production, filing and distribution of documents during the digital design and production of aerospace products, as well as the requirements for the utility, copy, preservation, transfer, appraisal and statistics of digital files.	**Management of aerospace product digital design and files**

Table 1. CASIC Archives digital records management system and specifications

Digital Records System Framework

the OA system

1.The documents that need to be filed from the OA system are transferred to an intermediate base and, after a certain period of time or when a certain standard is met, are then transferred to the filing system;

2.The documents are transferred from the OA system directly to the filing system and then categorized and given a volume and mark volume number by filing personnel; and

3.The documents in the OA system are converted to XML format and then transferred into the filing system.

The PDM system

1. Off-line filing, which involves inputting the documents on certain storage media and then transferring them to the filing system; and

2. Imitation of the procedures used to file documents in the OA system.

Major Obstacles and Challenges of Digital Records Management

Short-comings of the Existing Records Management System

Personnel Obstacles

Short-comings of System Construction

Technical Obstacles

Short-comings of the Existing Records Management System

- **the management system is out of date**

Name	Date established	Specification code	Specification grade
Requirements for optical disk storage, filing and archival management of CAD electronic records, Part 1: Filing and archival management of CAD electronic records	1999	GB/T 17678.1-1999	National
Requirements for optical disk storage, filing and archival management of CAD electronic records, Part 2: Information structure in an optical disk	1999	GB/T 17678.2-1999	National
Standards of electronic records filing and management	2002	GB/T 18894-2002	National
Specification for digitization of paper-based records	2005	DA/T 31-2005	Industrial
Standards of electronic document filing and management	2005	DA/T 32-2005	Industrial
Specification for the structure of electronic official documents based on XML, Part 1. General principles	2005	GB/T 19667.1-2005	National
Specification for the structure of electronic official documents based on XML, Part 2: Document body	2005	GB/T 19667.2-2005	National

Table 1. CASIC Archives digital records management system and specifications

- the management responsibilities have not been clearly defined

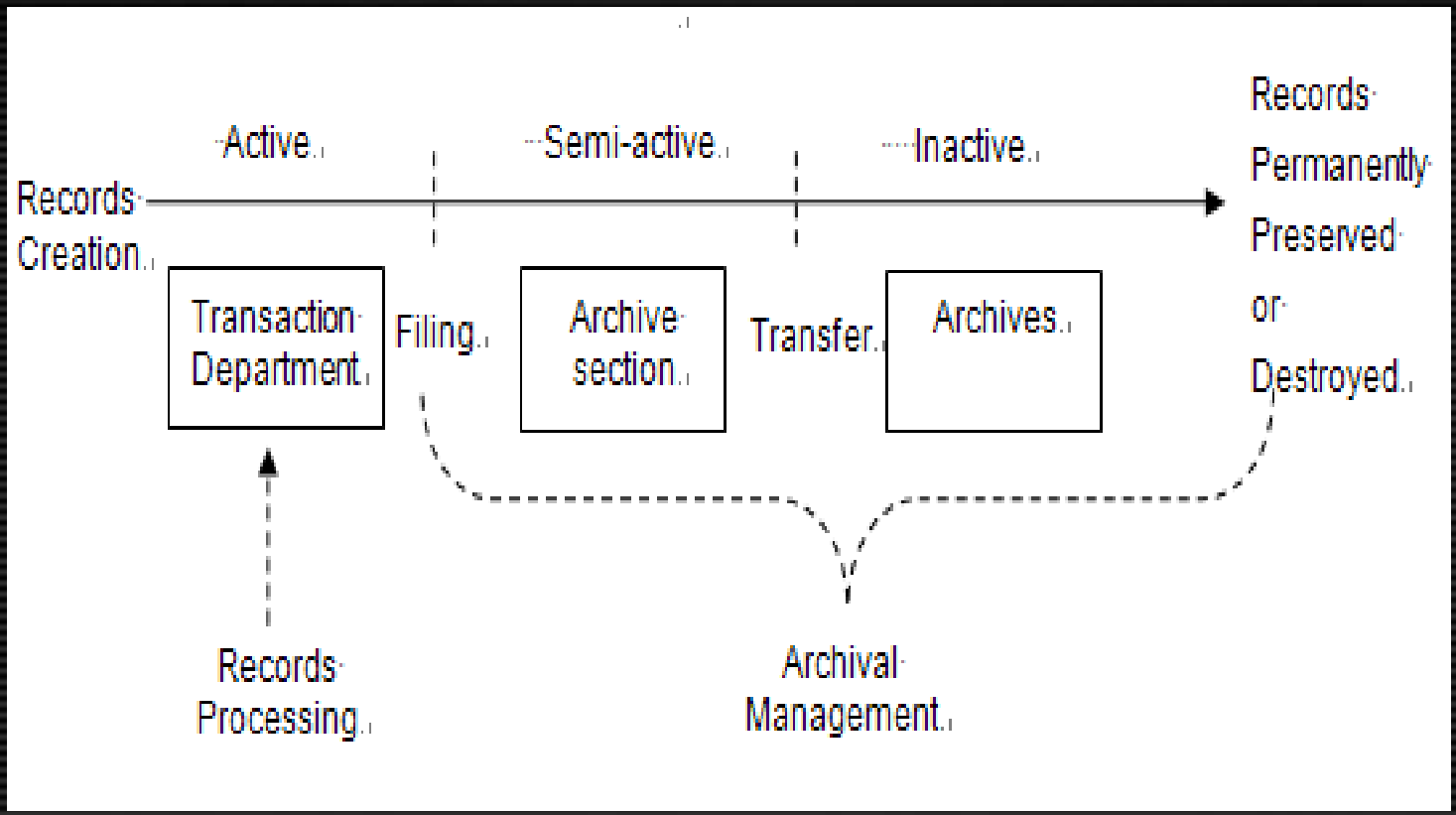


Figure 5. Lifecycle Records Management Model

- **Lack of system oversight and supervision.**

1

No tests have been implemented for digital records management systems.

2

Proper oversight and supervision measures have not been established for the digital records management systems.

3

A digital records property audit system has not been established.

Short-comings of System Construction

- **Lack of a comprehensive and appropriate systems functional requirements analysis.**

- **Development is not well-organized, such that the related design and testing processes can easily result in system loopholes.**

Technical Obstacles

- Problem of partial upgrade and reconstruction of system
- Compatibility between new and old systems
- How to ensure the digital records are interoperable with different system environments
- How to reduce dependence on technology-dependent authentication cyh

Personnel Obstacles

- *Outdated modes of thought*
- *Lack of knowledge*

For example:

Lack sufficient knowledge of digital records management

Have little sense of, or competence in, the front-end control of records management

Know little about basic knowledge about information technology

Thinking and Solutions to Guarantee the Authenticity of Digital Records

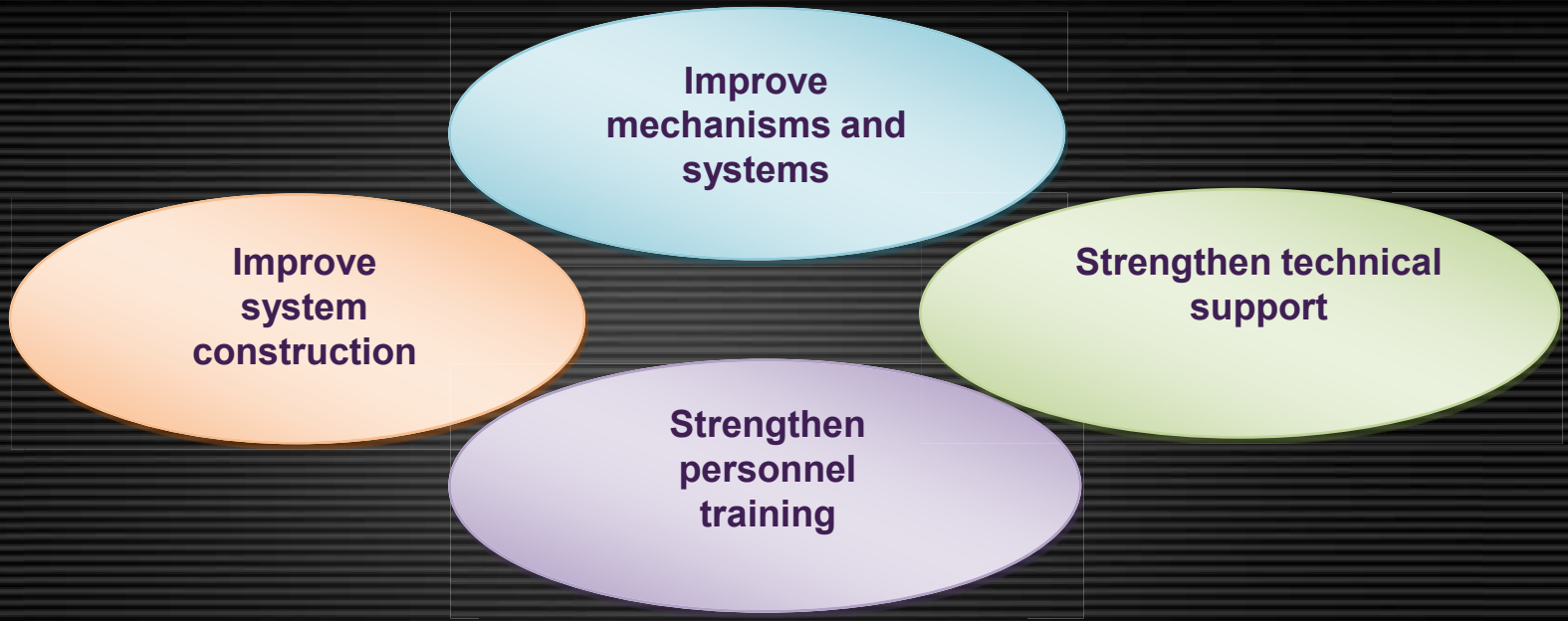


Figure 7. Framework of a strategy to guarantee the authenticity of digital records

Improve Mechanism and Strengthen System Construction

Information development stage	1st stage start	2nd stage All-around construction	3rd stage Resource integration	4th stage In-depth development
The strategic emphasis of information development	Develop and apply single information system	Construct all the information infrastructure	Realize the integration and share of information resource	**In-depth development of information resources**
Status of digital records	Small quantity	Quantity accumulation	Quality improvement	**Great improvement in quantity and quality**
Understanding of digital records	Side products of information development	Information resource	Important information resources, backup of information development content	**Information property and knowledge property**
Degree of centralized management of digital records	Scattered	Half-scattered	Centralized	**Integrated**
Utilization of digital records	Individual utilization	Multiple specific utilization	Cross-department, cross-organization utilization	**All-society utilization**
Current information development stage of China	**Some areas and organizations**	**Overall level**	**Very few areas and organizations**	

Table 3. **Relationship between information construction and digital records**

Name	Status	Main function	Applicable scope
Digital Record Metadata Management Specification	Under development	Specify the requirements of type, applicable scope, description rules and format for aerospace industry digital record metadata	**Management of digital official records and archives in the aerospace industry**
Archival Database Construction Specification	**Under development**	**Specify the requirements, specifications and standards for the construction of an aerospace industry archival database**	**Construction of an archival database in the aerospace industry**

Table 4. **Digital records management specifications under development by the CASIC Archives**

Improve System and Specify Functional Requirements

- ***Ensure the authenticity of digital records by improving the digital management system***
- ***Reorganize the digital records management process***

Filing method	Definition
Off-line filing	**File the individual digital records**
Regular online filing	**File the digital records after transaction according to week, month or year through the computer network**
Real-time online filing	**Capture and file the digital records after transaction through the archives management system**

Table 5. List of digital record filing methods used by the CASIC Archives

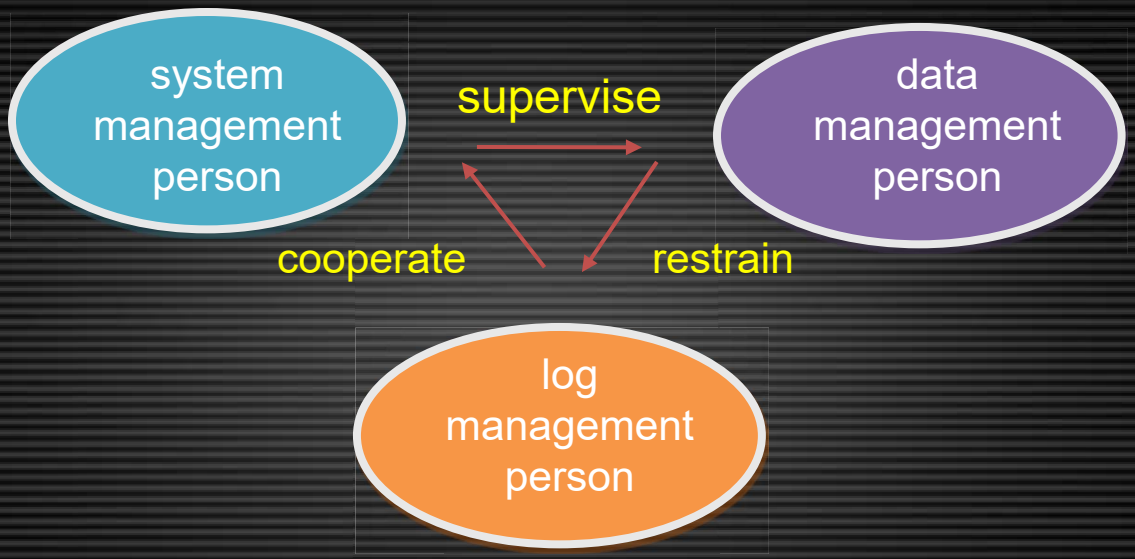


Figure 8. Diagram of “separation of three powers” of system, data and log management

Establish specifications for metadata management

Subcategory	Element	Definition	Description rule	Type	Compulsory (optional) description
Legal/ Administrative background	Legal/ Administrative background	The file establishment organization's legal environment and administrative status	Describe the information such as description, organization type and nature	character	compulsory
Metadata of original information system description	IS description	Describe the related information of the system itself, such as information system software name, edition, development platform, function and developing organization	Automatically created by system	character	optional
	IS Environment	Describe the operation environment of the original information system	Mainly include related hardware equipment, operating system and operation platform	character	optional

Establish specifications for metadata management

Metadata of creation/processing	Processing type	Processing types: Dispatch: draft, check, approve and advise to implement.. Receipt: advise to implement, approve to implement and implement.	Automatically created by system during transaction	character	compulsory
	Processor	Name or identity of the processor	Automatically recorded by system during transaction	character	compulsory
	Time of accepting processing	Time of accepting processing	Automatically recorded by system during transaction	date	compulsory
	Time of processing	Time to write processing suggestion	Automatically recorded by system during transaction; if the processing type is "draft," the processing time shall be	date	compulsory

Establish specifications for metadata management

			described with the time of drafting; if the processing type is "approve," the time shall be described with time of approval.¶		
	Time of sending out after processing.¶	Time of sending out record.¶	Automatically recorded by system.¶	date.¶	.¶
	Processing suggestion.¶	Processing suggestion according to processing type.¶	Manually described by processor or select the processing suggestions set in the system; if the processing type is "approve," describe the suggestion for approval; if the processing type is "check," describe the suggestion for check.¶	character.¶	.¶

Depend on Technology and Strengthen Technical Support

The proposed Digital Records Management System should:

- provide the best information channel for the organization to perform its functions and conduct its business;
- preserve the evidence of the organization's activities and transactions for as long as needed;
- integrate with the core transaction system of the organization on the platform of knowledge management; and
- provide information support and protection to enhance the core competence of the organization.

Provide Personnel Training and Strengthen HR Management

- ***Update concepts***

Making sure that personnel are fully aware that digital records are tangible records that can be created and preserved as evidence and are as reliable and trustworthy as paper records as long as they are properly managed.

Casting aside the thinking of “dual-system” and “dual-set.”

Provide Personnel Training and Strengthen HR Management

- ***Systematic training***
  - Post training for digital records management personnel;
  - Specialized training, which is in-time training on new technology;
  - Training for leaders;
  - Degree education.

Future Steps

✓Enhancing the sense of modernization and making greater progress.

✓Integrating the records and archives, which is the only way to go and can be realized only in the digital records environment.

✓Determining the digital records management plan and mode most suitable for the organization; establishing regulations and standards and strengthening personnel training.

✓Communicating with software development and program design departments, while considering technical support plans of different modes.

✓Establishing rules for digital records management based on information environment.

✓Enhancing all-around coordination, in-depth cooperation, complete integration and common improvement.

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Thank You !

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