Embedding Electronic Records Management Into the Fabric of Your Agency

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CIO
National Archives
And
Records Administration
OUR PAINFUL REALITY

THE RECORDS

MANAGEMENT WORLD

WE HAVE PREPARED

FOR NO LONGER EXISTS
Take Aways

Effective Records Management requires:

- Simultaneous attention to People, Process and Technology

- Integrating Records Management into Agency Business Processes and IT Governance and Applications

Records and Information Management
From 30K Ft.

- Decline in number of staff specializing in filing
- Investment in Software functionality that creates records is growing
- Mission critical records are often not sharable, retrievable or useable
- Copies proliferate; data conflicts or is unreliable
- Email often replaces phone conversations, meetings and formal written communication
- Instant Messaging increasingly replaces email
- Litigation and discovery costs skyrocketing
- Authenticity is questioned
- Premature destruction
- Tools to manage electronic records lag far behind
The Challenge of Electronic Records

- Authenticity – Over Time
- Variety – 4,800+ Different Types of E-Record Formats
- Complexity – Increasingly Sophisticated Formats
- Volume – Vast Quantities of Records
- Obsolescence – Constantly Changing Technology
- User Expectations – Evolving, Unrelenting
A System

A collection of two or more parts which interact with each other to function as a whole. Systems have three fundamental properties:

- The performance of any part affects the performance of the whole
- How any part affects the performance of the whole depends on what one or more of the other parts are doing
- Group the parts in any way and the groups will possess the first two properties
Profound Conclusions

A system is not the sum of its parts but a product of the part’s interactions.

The essential properties that define any system are properties of the whole and none of the parts have those properties.

When we take a system apart it loses its defining characteristics.
So What?

- Can not understand the whole system just by understanding the parts
- Obvious interventions often produce non-obvious consequences
- Cause and effect are not closely related in time and space
- Dividing an elephant in half does not produce two small elephants
So What?

- Today’s problems come from yesterday’s solutions

- There is no “Blame”

- If the parts are all trying to optimize themselves, the whole is sub-optimized
Systems Thinking

- Seeing interrelationships rather than linear cause-effect chains
- Seeing processes of change rather than snapshots
- Helps us see how we create our reality
Systems Thinking

- Points to higher leverage solutions to problems
- Helps us understand and describe complex issues
- A discipline for seeing structures underlying seemingly diverse personal, organizational and societal issues
Events, Patterns, and Structure

Structure is Harder to See

- Events
- Trends and Patterns
- Structure

Increased leverage and opportunity for learning

The “Water Line”

Like an iceberg, the big, important structure is hidden.
Structure is Harder to See

Move from thinking about events to observing history and on to uncovering structures.

If we see the world as events causing further events, we can react.

If we see trends and patterns, we can anticipate.

But if we can understand the underlying structure, we can change it. This is the opportunity to influence the events and patterns in our favor.
Exploring Structure and Relationships

Program Requirements

People Process Technology

Records Management

General Counsel

Information Technology
The Big Picture Goals

- Enterprises economically and effectively create and manage records necessary to meet business needs,

- Records are kept long enough to protect rights and assure accountability, and

- Records of archival value are preserved and made available for future generations
Creating The Balance

Order

Deliver

Bill
People Dynamics

Program Managers

General Counsel Staff

Information Technology Staff

Records Management Staff
The People Dimension
Records Managers

Structure
- Authority
- Position Levels
- Reporting Relationships
- Development Team Composition

Competencies
- Electronic Records Management
- Language
- Risk Assessment & Management
- Business Process Design
- Systems Analysis
- Requirements Development
- Project Management
The People Dimension

- Performance Management
  - Expectations Management
  - Incentives/Rewards
  - Performance Plans

- Continuous Training
  - Evolving Development Plans
  - Evolving Curriculum

- Change Management
Process

- Capital Planning and Control
- Enterprise Architecture
- Business Process Design
- Solution Development Lifecycle
Records Management
In Capital Planning

- Will proposed system create records?
- Will proposed system be required to support electronic recordkeeping?
- Who will represent records management on team?
- Will execution of system business processes result in the generation, management/distribution of intellectual capital, other products, or electronic files across the business and/or extended enterprise?
- Are resulting outcomes/products used in making business decisions?
Federal Enterprise Architecture Reference Models

- **Performance Reference Model (PRM)**
  - Inputs, Outputs, and Outcomes
  - Uniquely Tailored Performance Indicators

- **Business Reference Model (BRM)**
  - Lines of Business
  - Agencies, Customers, Partners

- **Service Component Reference Model (SRM)**
  - Service Domains, Service Types
  - Business & Service Components

- **Data Reference Model (DRM)**
  - Business-focused Data Standardization
  - Cross-Agency Information Exchanges

- **Technical Reference Model (TRM)**
  - Service Component Interfaces, Interoperability
  - Technologies, Recommendations

Component-Based Architectures
Specify Records During Business Process Design

Start → Business Result

Create Record
Business Process Design

Does this transaction require:

- Evidence of decisions or action?
- Evidence of performance?
- Compliance with applicable statutes, regulations, orders, and other directives that require business unit to create records?
- Documentation to enable business unit to protect its interests?
- Accountability for the use of resources?
Business Process Design (cont.)

Does this transaction require:

- Documentation of decision-making processes consistent with the law?
- Preservation of the agency’s corporate memory, and a capability for tracking business transactions over time?
- Creation of records of significant government policies and activities that must be kept for posterity?
- A record of communications within/between agencies, and between the agency and the general public (as applicable)?
Solutions Development Life Cycle Method

- **Product Plan**
  - Based on needs identified in BPD and approved in CPCP
  - Includes creation points for records

- **Phase Deliverables**
  - Concept Development
  - Requirements Definition
  - Preliminary Design
  - Detail Design
  - Development
  - Integration & System Test
  - Development & Acceptance

- **Deliverables**
  - Testbeds and prototypes
  - Pilots
  - Production and evolutionary releases

- **To next phase**
- **Production**
  - Another Phase?
    - Yes: New Phase Planning
    - No: Retirement & Roll Over
RM in Solutions Development Life Cycle Methods

- Ensure records creation points in the Business Process Design are in the system design.
- Re-evaluate records creation points at each iteration of system development/re-design.
- Migrate records at system upgrade.
- Manage records, including meta-data definitions & attributes at system retirement and roll over.
- Transfer records, including meta-data definitions & attributes as appropriate.
Technology

- Enterprise Architecture
- Service Components
- Persistent Object Preservation
Federal Enterprise Architecture
Reference Models

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Component-Based Architectures

Records Mgt
Policy, Transaction
Outcomes, Records
Components, Functions

Performance and Business Driven
Component Definition

A self-contained business process or service with predetermined functionality that may be exposed through a business or technology interface.
Component Attributes

- A software component should be well documented to promote understanding of its capabilities, and encourage its consumption.

- A component should clearly separate the definition of the services that it provides from its implementation of those services.

- A true component can be independently developed, delivered, and installed without complex interdependencies on other external components.
Core RM Capabilities

A “core” set of records management capabilities might include:

- Record Organization/classification scheme and file plan
- Record capture, declaration, and management
- Record search, display and presentation
- Record retention and disposal
- Access control
Core RM Capabilities Provide

- Audit
- Reporting
- Usability
- Design & Performance
- Compliance with statutes, regulations, and standards
Bringing It All Together

Enterprise Architecture

- Aligns people, technology, and business goals
- Establishes the process for documenting lines of business, funding review, technology implementation
- Exposes business functions common to all agencies such as Records Management
Bringing It All Together

Capital Planning & Investment Process

- Ensure RM requirements are in the budget
- Fund/approve systems upgrade or initial purchase
- Include funding of RM components
- Ensure IT solution satisfies EA requirements
- Adjust/readjust ROI for re-used components
Bringing It All Together

Business Process Design Methods

- Identify business transactions
- Identify points for record creation
- Identify records management functions to be supported
- Identify RM components for re-use

Capital Planning & Investment Process

Review RM Components for Re-Use

Business Process Design Methods

SDLC
- Concept
- Requirements
- Design
- Develop
- Test
Bringing It All Together

Solution Development Life Cycle

- Procure/acquire system
- Ensure BPDM & CP requirements are met
- Determine system life cycle review
- Initiate review, upgrade process
- Identify RM components for re-use

Capital Planning & Investment Process

Business Process Design Methods

SDLC
- Concept
- Requirements
- Design
- Develop
- Test

Review RM Components for Re-Use
Bringing It All Together

Capital Planning & Investment Process

Business Process Design Methods

SDLC
- Concept
- Requirements
- Design
- Develop
- Test

Review RM Components for Re-Use
IT Management Processes

Capital Planning & Investment Process

Enterprise Architecture

Business Process Design Methods

SDLC
- Concept
- Requirements
- Design
- Develop
- Test

Records Management Components
The Challenge of Electronic Records

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The Electronic Records Archives

NARA’s Current Electronic Records System

- NARA has 30 years of experience with electronic records
- Simple Files
  - Comma delimited
  - ASCII
  - Flat Fixed Length
- Does not meet the need
Electronic Records Archives

The Archivist’s Directive:

ERA is NARA’s Strategic Response

The Electronic Records Archives (ERA) is a comprehensive, systematic, and dynamic means of preserving and providing continuing access to authentic electronic records over time.

The goal of ERA is to enable NARA to preserve and provide access to any type of electronic record created anywhere in the Federal Government.

ERA’s Vision Statement

"ERA will authentically preserve and provide access to any kind of electronic record, free from dependency on any specific hardware or software, enabling NARA to carry out its mission into the future."

John W. Carlin, Archivist of the United States
Who Faces This Challenge?

Any enterprise that creates information that must endure longer than the technology that created it!
Who Else Needs This Capability?

- Aerospace
- Pharmaceuticals
- Energy
- Transportation
- Electronics
- Services

Actually, every enterprise and individual who has need to access electronic materials beyond 5-10 years.
Create a Capability That Will:

- Preserve authentically any type of electronic record,
- Created using any type of computer application,
- On any computing platform,
- From any entity in the Federal Government and any donor.
- Provide discovery and delivery to anyone with an interest and legal right of access,
- Now and for the life of the republic and beyond
ERA Requirements

- **Persistent**
  - To manage and access the records over time.

- **Authentic**
  - To ensure that these are the original records
  - Records that are created with attached documentary information

- **Scalable**
  - To grow and adapt to increasing volumes and evolving types of electronic records
  - To serve a variety of user groups
What Will the System Do?

- Protect the system and the records with state-of-the-art security.
- Accommodate substantial growth in volume & variety.
- Support the collection, integration, and sharing of information about records.
- Support the workflow associated with business processes.
- Interoperate with other systems.
- Maintain a complete audit trail.
Architecture Requirements

- Open Event Driven Architecture (ESB)
- Evolvable
- Integrated COTS
- Central Business Rule Repository
- Distributed / Grid Centric / Self-managing
- Secure / Classified As Well As Unclassified
- Highly Scaleable In All Dimensions
- HW / SW Independent Component Intermediation
- Highly Reliable
The Electronic Records Archives
Major Milestones

Where are we now?

- Awarded Two Design Contracts – 3Q04
- Select a Single Developer – 3Q05
- Initial Operating Capability – FY 2007
- Five Increments w/ Multiple Releases
- Full Operating Capability - 2011
The Seven Processes

Customer-Focused Long-Range Plan

- Product Planning & Management
- Information Technology Strategy
- Information Technology Architecture
- Hardware, Software, Communications
- Application Acquisition & Development
Rigorous Systems Thinking

- A state of mind

- Tools
  - Casual Loop Diagrams
  - Templates
  - Computer models