Records management by design – some considerations

A white paper written by ISO TC 46/SC 11 Archives/Records management

Purpose
This document describes records management by design and how organizations could use it to manage records in a variety of business systems in a way that meets the requirements. It also describes the benefits and risks of records management by design and which existing products of ISO TC 46/SC 11 could be used for its application.

What is records management by design?
It is an approach in which records management is implemented in the initial design stage and throughout the complete lifecycle of products, processes or services that involve handling records. Records management by design is considered to be the same as archiving by design.

Design starts with a good understanding of the context of the organization and its requirements related to records, and taking decisions on which of these requirements need to be met, and how, in the design or – as the context will change in time - during the lifecycle of those products, processes or services. Or, as products, processes or services can be offered by third parties, which of these parties is best suited to meet the requirements, by design.

Decision-making is informed by the assessment of risks (both positive and negative) by meeting or not meeting those requirements.

Relevance of records management by design
Until recently, the dominating paradigm was to capture electronic records in dedicated systems\(^1\), such as Electronic Document and Records Management Systems (EDRMS) or Enterprise Content Management (ECM) systems. Which reflects a more traditional approach used for managing paper records.

Now this paradigm is changing since:

- Moving huge volumes of all the diverse digital records to a single centralized EDRMS often turns out to be technically impossible and impractical. Many digital records created in formats like Computer-Aided Design (CAD), Electronic Health Records (EHR) cannot be adequately supported by EDRMS. Additionally, moving these records out of their original business systems could compromise their authenticity, reliability, integrity and usability;

- The archival community is currently exploring and adopting methods where only intellectual control is handed over to archival institutions, known as “records management in-place”;

- As cloud solutions, distributed systems and decentralized systems like blockchain become increasingly popular in business, they challenge outdated paradigms and traditional ways of operating;

- Multi-tenant systems bring added complexity, particularly when the tenants are not independent and are involved in exchanging records across an entire community; and

- Certain systems and environments intentionally provide immutability, such as blockchain or WORM-based solutions, or they practically make it impossible to delete data, like in databases.

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\(^1\) A system is a set of interacting elements (source: ISO 9000:2015), elements of a records system include hard- and software, people, processes and procedures.
Recognizing that a lot of records should and will be managed in the business systems themselves, these business systems need to provide some basic records management functionality. Without proper consideration of records requirements in the conceptualization stage, these systems might fail to meet these requirements. Which is not beneficial for organizations, and could even pose risks (for business continuity, or for complying with laws and regulations).

The “records management by design” approach emphasizes the importance of incorporating robust records management functionality in business systems, encompassing their design, maintenance and continuous improvement.

It should be noted that the “records management by design” approach is obviously applied in the design of the dedicated records management systems, services and procedures, hence in this area this approach is redundant.

The approach of “records management by design” can be combined with the use of centralized dedicated records management systems (e.g. EDRMS) as “control centers”. These control centers monitor, control and oversee records-related activities in business systems, including retention and disposition and, where necessary, accept records from these systems for storage and preservation. ISO 16175-1:2020 provides configuration options for managing records in business systems.

What are the benefits and risks of records management by design?

Consistent implementation of records management by design by the developers of products, services and procedures could enable wider adoption of modern records management approaches and processes, resulting in substantial business and societal benefits in the long term. It could also enable wider adoption of cloud services and solutions.

However, there is a catch. Commercial developers will likely invest in this additional functionality and in the redesign of their products if and only if a return on investment is guaranteed – which is not always the case in real life. Without a good business case, they may be unwilling to take risks.

Adding “serious” records management functionality to business systems can be rather expensive and time-consuming. And there is a risk that this functionality will be underused for whatever reasons. There is an expectation that problematic topics could be monitoring of retention periods and disposal of records, as well as long-term preservation of usability of records without losing their authoritativeness.

The “records management by design” approach can provide significant benefits to owners and users of complex or innovative information processing infrastructures, especially in highly-regulated industries or litigious environments (like e-discovery practice in the USA). These individuals or organizations have a strong economic incentive to invest in unique or customized solutions that meet their specific needs.

What are potential use cases?

Potential use cases include but are not limited to:

- Managing records in distributed, cloud, structured, multi-tenant, or other innovative environments;
- Enabling disposition of records from business systems (either via a transfer of via destruction);
- Legal compliance of blockchain/Distributed Ledger Technology (DLT) solutions (including disposition of personal identifiable information (PII) when required);
- The explicability and transparency of artificial intelligence decision making (as required by the AI Act of the European Union, for example);
- Long-term preservation of complex high-volume digital records (scientific data, electronic health records, R&D documentation, etc.);
- Smart everything (cities, etc.), to be able to record smart device sensor output, identify changes and to interpretate relations;
- Internet of Things (smart devices connected to the Internet); and
Managing email, text messages, websites, social media, etc. as records, not necessarily in EDRMS.

What is the potential audience?

The target audience for records management by design includes, but is not limited to:

- Developers of business products, services, and procedures;
- Government regulators setting records management requirements for the products, services, and procedures acquired through public procurement procedures;
- Organizations looking for business solutions with adequate records management functionality, especially the ones willing to pay for unique or customized solutions;
- Records professionals and professionals in related disciplines (such as information security) who are involved in the design and implementation of records systems; and
- Academia

Use of existing ISO TC 46/SC 11 products for records management by design

ISO 16175-1:2020 Processes and functional requirements for software for managing records — Part 1: Functional requirements and associated guidance for any applications that manage digital records is a standard that directly relates to records management by design. It provides high-level model requirements that can be used for the design, implementation and maintenance of systems intended to manage records, in accordance with the principles set out by ISO 15489-1:2016 Records management - Part 1: Concepts and principles.

The design and implementation of these systems should take into account the business context and identified records requirements. The process of appraisal, as described in ISO/TR 21946:2018 Appraisal for managing records, includes an analysis of the business context of organizations and identifies requirements for records from business, legal and societal viewpoints. And a mechanism to identify and assess risks associated with records. The analysis of the context of organizations draws from ISO/TR 26122 Work process analysis for records, while the mechanism to identify and assess risks is derived from ISO/TR 18128 Risk assessment for records processes and systems.

As such, appraisal can be used to inform organizations before or during the design, implementation and maintenance of systems managing records.

On the organizational level, records management by design can be applied as part of enterprise architecture requirements, which influence systems analysis, design, planning, and change management. Incorporating recordkeeping requirements into system analysis and design will help enterprise architects link systems to recordkeeping control tools, and thus resolve issues such as the efficient and systematic control of the creation and management of records. The embedment of records management in enterprise architecture is described in ISO/TR 21965:2019 Records management in enterprise architecture.