Electronic data management forms a key part of the European Union's Digital Agenda

European Institutions

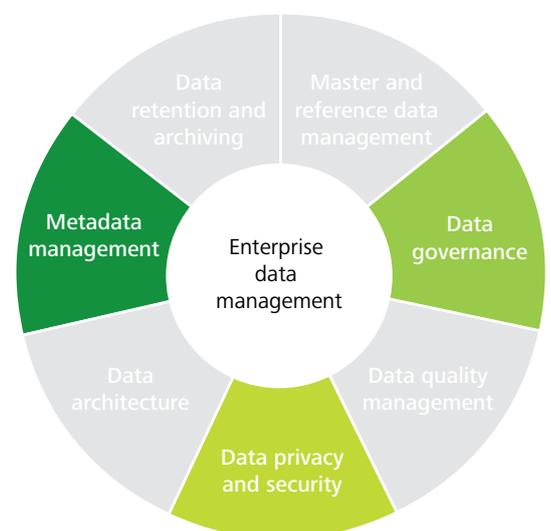**Charles Delancray**
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On 1 July 2013, Croatia is due to become the 28th member of the European Union. Through its enlargement policy, the EU has not only brought nations and cultures together; but also their associated data volumes and diversity.

European institutions have the particular feature of being driven by data and driving data: what other authority is better positioned to tackle the profound policy questions posed by this new-age of data-intensive flows? Europe has a special responsibility to take the lead rather than to react to events in this domain. The European Union has an important, coordinating role in achieving effective electronic data management (EDM), through its Digital Agenda (one of the priorities of 'EU 2020': the European Union's ten-year growth strategy), Framework Program and EDM-related policies and directives.

To meet the data management expectations of its internal and external 'clients' (i.e. data protection, data reliability, data transparency, data availability, reporting, etc.) and adapt to the Digital Age, European institutions and public administrations should give particular consideration to three main factors in their strategic decisions: data governance, data privacy and security, and metadata management.

Enterprise data management system

Enterprise data management

- Data retention and archiving
- Master and reference data management
- Data governance
- Data quality management
- Data privacy and security
- Data architecture
- Metadata management

Data governance

Two years ago, the High Level Expert Group on Scientific Data reported that Europe was *"currently encouraging its member states to include data management and governance considerations in the curricula of their secondary schools, as part of the IT familiarisation programs that are becoming common in European education"*[2]. Data governance, which ensures that data is owned and stewarded accurately and consistently, is a key development that will promote trust and interoperability at international level.

Data governance focuses on enabling technologies. Europe is currently investing in a 'Collaborative Data Infrastructure', in order to reach a broad, conceptual framework for how different governments, but also companies, institutions, universities and individuals would interact with the system. This is the solution to another challenge for the European public sector: implementing infrastructures for shared data that would be local and global, secure but open, flexible yet reliable, affordable but high-performance.

Within European institutions, setting up a framework to provide efficient and effective data management processes, governance, organisation and controls is a major concern. For example, Deloitte supported the implementation of the following measures as the basis for data management within a Directorate General of the European Commission: the definition of data quality standards, the completion of data to meet quality standards, the standardisation of the encoding, validating and auditing processes; the establishment of central coordination and the identification/definition of the roles and responsibilities of key participants (e.g. data owners and encoders), and the implementation of controls (business rules and process automation).

Data privacy and security

European institutions and public administrations are under pressure to meet contradictory public expectations for both transparency and privacy.

To respond to these requirements, in January 2012 the European Commission proposed a comprehensive reform of data protection rules to revise the EU's 1995 Data Protection Directive (95/46/EC) with the objective of increasing the user's control of their data and cutting costs for businesses.

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In the Digital Age, the collection and storage of personal information are essential, but the way data is collected, accessed and used has been profoundly changed by technological progress and globalisation. Data is used by all businesses—from insurance firms and banks to social media sites and search engines. The objective of this reform is to reinforce consumer confidence in online services: *"The protection of personal data is a fundamental right for all Europeans, but citizens do not always feel in full control of their personal data"*, stated EU Justice Commissioner Viviane Reding, the Commission's Vice President. She added: *"A strong, clear and uniform legal framework at EU level will help to unleash the potential of the Digital Single Market and foster economic growth, innovation and job creation"*. This general Data Protection Directive has been supplemented by other legal instruments. Article 8 of the EU's Charter of Fundamental Rights and the Lisbon Treaty also recognise the right to the protection of personal data, by providing a legal basis for rules on data protection for all activities within the scope of EU law (Article 16 of the Treaty).

Europe supports data privacy and security by providing the relevant juridical framework to European institutions, national institutions and private organisations. The Irish presidency of the EU has made data protection one of its priorities, and is working hard to achieve a political agreement on the data protection reform by the end of the Irish presidency (June 2013)[3].

Metadata management

The main aim of metadata ('data about data') is to improve resource recovery and to answer needs related to administrative control, security, personal information, content rating, rights management and preservation, etc. Metadata management is not only a key factor in the preservation of data, it is essential to semantic interoperability among member states.
On 1 January 2010, European Institutions launched a six-year program on interoperability solutions for European public administrations (the ISA program)[4], with the aim of facilitating efficient and effective cross-border electronic collaboration between European public administrations.
In the ISA[5] report, 'Towards government open metadata', the European Commission encourages the management of metadata and addresses the requirements of public administrations: they should identify and document metadata, make it available for reuse, identify inconsistencies and opportunities for harmonisation and provide metadata both in human and machine readable formats.

It is only by harmonising the way member states approach metadata that quality, cross-referencing, integrity and reusability potential will be improved.

Enhancing metadata management is a policy priority of the European Commission: it is a core success factor for interoperability, and therefore, for the digital economy and the EU's Digital Agenda. Nevertheless, the policy evaluation of metadata management underway has demonstrated areas for improvement. European institutions and public administrations should further consider the integration of communications and awareness raising, the engagement of stakeholders and project management continuity, and the avoidance of overlaps and duplication, in order to successfully apply EU metadata management principles.

3 http://ec.europa.eu/justice/newsroom/data-protection/news/120125_en.htm

4 http://ec.europa.eu/isa/

5 http://joinup.ec.europa.eu/sites/default/files/towards_open_government_metadata_0.pdf

Recommendations

Effective data management is crucial for operational efficiency within public organisations, and can result in the generation of substantial benefits for its 'clients'. It is true that public bodies have been slower to recognise the value they can achieve from effectively harnessing the power of data they hold. The scale and range of public sector data is overwhelming, but not effectively exploited.

The electronic data management practices of European and national public administrations could be developed through investments in data analytics software, resources and processes. They would benefit from key capabilities in sharing and manipulating their own data (which could be culled from the web), and integrating diverse data from public administrations, and social and corporate databases. This could boost the efficiency of their services, for example by combating fraud through combining and analysing social and financial information.

Public services could also be improved if public administrations were to invest in social media. Social networks would provide a space to evaluate public opinion, obtain feedback on policies and communicate emergency information more efficiently. Social media provide public organisations with an opportunity to be more responsive to citizens. The effectiveness of social networks in facilitating citizen protest has demonstrated that governments can use the same networks to be more proactive in their engagement with the public. Governments are beginning to recognise the value of using social media to solicit feedback, share information and communicate with citizens.

European institutions could adopt and document a consistent strategy for overall data management: metadata, master and reference data. For example, Deloitte has demonstrated the value-added of business process management tools to support master and reference data management. This could also be applied to metadata management, to guarantee consistent data visibility and reporting.

Challenges and next steps

A fundamental characteristic of our age is the rising tide of data, which is global, diverse, valuable and complex. Applied to European public organisations, this leads to major challenges that need to be overcome if sound electronics data management capabilities are to be developed in this sector:

First, European institutions have to change their mentality of operating in 'silos' and learn to operate in a matrix model. Technical solutions should be re-designed accordingly in order to establish sustainable organisation-wide information management. Data quality and accessibility then become key challenges, since for some institutions, European or national, data is not easy to access and manipulate, and often available only in hard copy or stored in incompatible formats. There is also a frequent inability to source data from multiple systems, due to the lack of a seamless exchange of information assets. Furthermore, institutions are concerned about privacy and security when it comes to releasing large amounts of raw data to the public. Finally, the context of multi-stakeholders and multi-cultural contexts in an enlarging Europe adds complexity to the set-up of best practices such as metadata management.

Deloitte has an established framework that addresses the core aspects of an organisation's ability to manage its data and to deal with the recent challenges and rapid growth of information assets. The Deloitte Analytics Public Sector group has the industry knowledge and tools to address the unique challenges that public sector organisations face. Data mining and data analytics support better policy setting and decision making.

Data is a renewable resource, continually multiplying in volume. Fresh data is continually being collected and replenished, and existing data is being used in unforeseen ways, as new applications are to be developed. In an information-driven age, the ability of European and national institutions politicians to realise the opportunities associated with data management may make policy implementation more successful, empower institutions to govern more effectively, based on solid evidence, and lead the European economy to expand. The result should produce a vital asset that is flexible, reliable, efficient, cross-disciplinary and cross-border.