

Data Management Maturity

1. Data Management Maturity Survey

ITANA.org and DASIG are interested in the state of data management practices in higher education. This survey captures maturity levels for 9 key areas of data management. Each question is based on a 1 to 10 ranking.

On a scale of 1 to 10 with 1 being defined as lowest on the scale and 10 being defined as the highest level of accomplishment in the area, please rank your institution's maturity related to the following data management areas.

* 1. Data governance

1 - my institution has no formal data governance policies and no governance bodies currently in place.	2	3	4	5 - a data governance group has been formed, representing major administrative areas from the institution. Data decisions related to those areas are discussed by the stewards, with some actions resulting from those discussions.	6	7	8	9	10 - every data decision is governed by a formal process and/or policy. Each data area has a formal governance body that oversees the quality and use of its respective data. Data policies are strictly enforced. All data movement throughout the organization is regulated and managed.
--	---	---	---	---	---	---	---	---	--

Data governance	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>	<input type="text" value="j0"/>
-----------------	---------------------------------	---------------------------------	---------------------------------	---------------------------------	---------------------------------	---------------------------------	---------------------------------	---------------------------------	---------------------------------	---------------------------------

Data Management Maturity

* 2. Data Architecture, analysis and design

1 – there is no formal architecture related to data. Data exists in multiple files and databases, using multiple formats and technologies. Changes to any data structures are made “on the fly”, based on the needs of individual areas or project teams. Changes are made by the project teams or DBAs responsible for the applications. There are no data models of any sort, and limited if any documentation regarding the data or the structures.

2

3

4

5 – data documentation exists for most systems in the form of data dictionaries and physical data models. There is at minimum a review done with affected areas prior to data structure changes being made. Enterprise level architectural planning is in the early stage of development, and not yet an effective practice enterprise-wide

6

7

8

9

10 – a data architecture exists which encompasses all data for the institution. Metadata management is a top priority, and is used to document all data. Change management best practices require that any change to production data stores requires review and documentation. Data models are maintained at an enterprise level for both logical and physical views of the data.

Data Architecture, analysis and design

j0

j0

j0

j0

j0

j0

j0

j0

j0

j0

Data Management Maturity

* 3. Database management

1 - databases are managed by the software that uses them (schema is installed out of the box, scripts are run as provided by the vendor or developer to maintain the database). At times individual DBAs are called in to do tasks that cannot be done by vendor provided scripts. There is no database optimization outside what the vendor provides.

2

3

4

5 – minimal changes are made to schemas for vendor supplied software. Some optimization to database environments occur, primarily for security or performance reasons. Sporadic support, dependent on the presence of a “guru,” usually the person who created that information system, is the norm for non-enterprise/localized databases, while enterprise-level data systems are under the joint management of more centralized business and IT resources.

6

7

8

9

10- database needs and schemas are analyzed before projects start. Standard maintenance processes and change control are applied across all databases. A standard schema supports a formal data architecture.

Database management

ja

ja

ja

ja

ja

ja

ja

ja

ja

ja

Data Management Maturity

* 4. Data security management

1 – data security is handled by individual application administrators, many times being a project leader or programmer who manages the system. Security is provided at a screen or function level, with that functionality being granted individually to a person. There are no security audits, and minimal if any transaction log review .

2

3

4

5 – data security roles are recognized at the institutional level. Movement is underway to migrate data security to a role-based model. Data security is maintained at the application level. Data security audits occur infrequently. Identity management is a growing area of awareness, but role-based authorization is not yet implemented at the application level, since many different authentication and authorization schemes are in place, all managed differently. It is not always possible to completely track who has accessed specific elements of data, nor for what purpose.

6

7

8

9

10 – data security is managed at the role level. Regular audits of data security and policy are conducted, with divergences acted upon appropriately. A central data security management tool is utilized, with the security metadata being populated to the required systems for population in each respective format. Automated reviews of update logs are conducted to look for variances.

Data security management

ja

ja

ja

ja

ja

ja

ja

ja

ja

ja

Data Management Maturity

* 5. Data quality management

1 – information quality is poor. There is no consistency of data across systems or data stores. Multiple sources of data entry for the same data element are allowed, with no cross correlation of validity and standardized form of entry	2	3	4	5 – consistency of data quality across major systems is improving. Major data elements are standardized, and systems of record have been identified. Reporting methods are employed to perform cross-system data validity.	6	7	8	9	10 – continuous data quality improvement programs are in place and stewarded. Automated methods are employed to review the data quality, with feedback being forwarded to the respective data stewards.
--	---	---	---	--	---	---	---	---	---

Data quality management

j0 j0 j0 j0 j0 j0 j0 j0 j0 j0

* 6. Reference and master data management

1 – there are multiple versions of coded values used in many areas across the institution. No validation across the codes occurs, therefore the codes are horrendously out of sync. This causes problems with reporting and consistent	2	3	4	5 – MDM and reference data are considered to be "a good idea," and are being added to future implementation items. Research has begun on which subsets of data might be appropriate in an MDM program, and which types of reference data make sense for inclusion in strategies. Attempts have been made to create master categories of data codes, with some success. There is some	6	7	8	9	10 – there is a single view of master data across the institution. All validation occurs against the master data view. Regular updates are made to the master data to reflect changes at the institutional level.
--	---	---	---	--	---	---	---	---	---

Data Management Maturity

Reference and master data management

j0 j0 j0 j0 j0 j0 j0 j0 j0 j0

amount of synchronization of master data codes across major systems.

* 7. Data warehousing and business intelligence management

1 – if a data warehouse exists, it contains minimal data areas. Minimal if any dimensions exist to the data, and most likely is a copy of the transactional image of the application system. Metadata is limited, master data is not synced across the various data domains. Reporting is done in an ad hoc manner, requiring intimate knowledge of the context and structure. Updates to the data are done at random intervals

2

3

4

5 – a data warehouse exists, with dimensionalized data from several of the major institutional systems. There is a standardized reporting environment and tool, with a set of metadata that is created manually. Updates to the data stores in the warehouse are done at intervals consistent with the business systems that the data is extracted from.

6

7

8

9

10 – data from all strategic institutional systems is housed in a data warehouse, with dimensions and data marts established which allow for the major types of analysis and review. All associated metadata and master data is integrated with the reporting tools that access the warehouse. Reporting from all systems is conducted through a portal in the warehousing environment, thus ensuring consistent results and cross functional analysis. Data updates to the warehouse occur on a frequency associated with the business

Data Management Maturity

cycles.

Data warehousing and
business intelligence
management

j0 j0 j0 j0 j0 j0 j0 j0 j0 j0 j0

* 8. Document management/Content management/Records management (electronic records only, not paper based)

1 - there are no formal designated areas for unstructured institutional data. Documents are on departmental file systems, user desktops, google docs and other places. There are no formalized classification schemes, retention periods, archivals or workflows.

2

3

4

5 - recognition of the need for formal policies and archival workflows is in place. Work has begun to document institutionally important and/or legally required documents. Some work has already been accomplished to move the electronic records off of user desktops and onto secured storage areas.

6

7

8

9

10 - management of institutional unstructured data is a priority. There is still room for improvement but classification schemas with designated retention periods and security

Document
management/Content
management/Records
management

j0 j0 j0 j0 j0 j0 j0 j0 j0 j0 j0

Data Management Maturity

* 9. Metadata management

1 – metadata is not a priority to the institution. Minimal, if any, metadata is maintained.	2	3	4	5 – metadata has been defined as important to the institution. Work is underway to implement a metadata repository, and to develop the processes necessary to populate it and keep it maintained. There is an awareness of how important it will become to address metadata more broadly with a movement toward more expanded business intelligence capabilities.	6	7	8	9	10 - metadata management is a top priority, and is used to document all data. Metadata supports an SOA architecture. A metadata repository is automatically maintained, and is essential for auditing and integration purposes. Sufficient resources are allocated to the development and support of metadata tools and processes.
---	---	---	---	---	---	---	---	---	--

Metadata management jñ jñ jñ jñ jñ jñ jñ jñ jñ jñ

10. Which of the areas above is most critical to you and/your institution right now ?

- Data governance
- Data architecture, analysis, and design
- Database management
- Data security management
- Data quality management
- Reference and master data management
- Data warehousing and business intelligence management
- Document management/Content management/Records management
- Metadata management

Data Management Maturity

11. Additional Comments

Please feel free to add additional information which would clarify or add context to your answers, or cover other areas which may not have been covered in the above questions.

2. Biographical Information

We would like to get a small amount of information about you and your institution.

* 1. Please provide the following information so we can contact you for further follow-up.

Name:

Institution:

Email Address: