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Role of metadata in county governance performance: a case of county governmentsin Kenya

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Abstract:-This document gives information on the adoption of metadata in the management of various units within the county. It brings to the fore the various categories of metadata that can be utilized to enable the counties visualize their objective. Metadata can be described as data about data it therefore details when, where and by whom a particular set of data was collected. It is therefore essential for understanding information stored in data warehouses. Many organizations since the advent of database technology, data warehousing and even recently cloud computing have been storing large volumes of data and information. Little of this data has been essential to this organizations whereas much percentage of the data has not been mined for utilization at all.

Keywords: -Metadata, County government, data, users.

Introduction

Metadata can be described as data about data. It describes how, when and by whom a particular set of data was collected, and how the data is formatted. It is therefore essential for understanding information stored in data warehouses. Many organizations since the advent of database technology, data warehousing and even recently cloud computing have been storing large volumes of data and information. Little of this data has been essential to this organizations whereas much percentage of the data has not been mined for utilization at all.

Tutorials Point (2014) defines metadata as data that are used to represent other data. For instance the index of a book serve as metadata for the contents in the book it is therefore referred to as summarized data that leads one to the detailed data. The fact is that these organizations much as they have the data they don't have proper means or methods to access and sieve the data to full use. The use of metadata to support technical decisions and training is now widespread and pervasive across a broad range of organizational and management areas. Accordingly, data mining technology has become an increasingly important area for intelligent computational systems.

In Kenya, county governance departments such as health, finance and accounting, tourism and security data is essential to allow individuals as well as various sector heads to organize and manage their departments objectively. Data is essentially the plain facts and statistics collected during the operations of a business (Sirianni, 2014). They can be used to measure a wide range of business activities both internal and external. This in turn becomes informative, as it forms the basis for all reporting and as such is crucial in organizational performance.

Managing data as a resource is an important managerial task in any organisation today. It is evident that organization success depends not only on the possession of resources, but on the efficient utilisation of resources data and information within an organisation and its environment form part of the strategic, tactical and operational resources of an enterprise (Scheepers., 2001).

Important of metadata for county governance

According to (NISO, 2004)Metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource. Metadata is key to ensuring that resources will survive and continue to be accessible into the future. Metadata can describe resources at any level of aggregation. It can describe a collection, a single resource, or a component part of a larger resource.

The publication further explains that an important reason for creating descriptive metadata is to facilitate discovery of relevant information. In addition to resource discovery, metadata can help organize electronic resources, facilitate



interoperability and legacy resource integration, provide digital identification, and support archiving and preservation.

Bretheron & Singley (1994) distinguish between two distinct classes: structural/control metadata and guide metadata.Structural metadata is used to describe the structure of database objects such as tables, columns, keys and indexes. Guide metadata is used to help humans find specific items and is usually expressed as a set of keywords in a natural language.

There various types of metadata according to NISO (2004) the three main types of metadata include:

- Descriptive metadata.
- Structural metadata.
- Administrative metadata

The table below summarizes metadata types that are useful in county governance.

Type of metadata	Description	Purpose	Integration into County governance
Administrative	Used in managing and administering information resources	 Acquisition information Location information Audit trails created by record keeping systems 	- Can be used at various administrative levels of the counties to support their mandate to service delivery
Descriptive	Metadata used to describe or identify information resources	 Cataloguing records Finding aids Hyperlinked relationships between resources Metadata for record keeping systems generated by records creators 	-Can be used to inform the general public about the county resources such as tourism sites this would attract revenue for the counties
Preservation	Metadata related to the preservation management of information resources	- Documentation of actions taken to preserve physical and digital versions of resources.	- For counties historical archives
Technical	Metadata related to how a system functions or metadata behave	 Hardware and software documentation Tracking of system response times Authentication and security data, such as encryption keys, passwords 	- for the technical expertise and controls of the counties information al resources

County governments structure in Kenya

The 2010 Constitution of Kenya, currently in operation stipulates the geographical units called the counties as devolved units of the Kenyan government. The powers are provided in Articles 191 and 192, and in the Fourth Schedule of the Constitution of Kenya and the County Governments Act of 2012 (Kenya Constitution, 2010). The counties are also single member constituencies for the election of members of parliament to the Senate of Kenya and special women members of parliament to the National Assembly of Kenya As of the 2013, general elections, there are 47 counties whose size and boundaries are based on the 47 legally recognised Districts of Kenya. Most of this counties consist of information such as the environment and natural resources, county accounts and inflation, agriculture, education, employment, energy, financial sector, health sector and justice.

Purpose of metadata adoption in county governance

The main purpose of metadata is to facilitate search, evaluation acquisition and use of resources (IEEE LTSC, 2002). Taking into account the diverse resources and cultures that exist in the counties, Metadata about this can be exploited for management and development purposes of the counties. Frosh Wilker, (2004) noted that metadata can be seen as a labelling system whose purpose is to describe an objects characteristic and objectives. Just like in learning process where metadata is required to support the access, search, selection, use, trade and management of



learning objectives (Friesen e.t.al, 2002). In county governance the same must apply to allow each section of the counties to trade use and manage their development objectives.

Administrative metadata for instance helps provide information to help manage a resource, such as when and how it was created, file type and other technical information, and who can access it. There are several subsets of administrative data such as:-Rights management metadata, which deals with intellectual property rights and Preservation metadata, which contains information needed to archive and preserve a resource.

Value of metadata in county governance

Metadata provides a number of very important benefits to the enterprise, including: - Consistency of definitions, Clarity of relationships and Clarity of data lineage (Alex Berson and Larry Dubov, 2007). Metadata is useful to Data Users, Data Developers, and Organizations and different levels of the government. In this era of data sharing, collaboration, and need for information organization, metadata can serve multiple purposes (DataONE, 2014).

The value of metadata to Data Developers it helps avoid data duplication because researchers can determine if data already exists. Organizations and county departments are able to share reliable information about a dataset by creating metadata and passing it along with the dataset. If they wish to reuse a dataset can be confident of its origins, data quality, and other valuable information about the data. It therefore allow data creators to publicize the valuable data they have collected by making the metadata available on clearinghouses and other publically available venues. Metadata can be used in citation practices, thus increasing the visibility of the data (DataONE, 2014).

Metadata allows the user to search for and access data from a variety of sources. A search for metadata can be constricted to a geographic boundary, thus showing the user what data has been collected in a particular region. Metadata records help users determine whether the data will be applicable for use in a particular study. Finally, metadata records are of value to data users, because they determine how a dataset can be acquired, and if there are any restrictions on how the data can be used.

An organization and county government departments that keeps current metadata can benefit in many ways. Metadata records help ensure that they investment in the data by retaining information about how the data was collected, processed, and quality controlled. This creates a permanent record of the dataset –which is critical institutional memory. When researchers leave or retire, metadata allows the dataset to "live on" for the organization. The data may be reused in another research project in the future, and future researchers in the counties will need to know how the dataset was created. Metadata advertises counties, creating new potential partnerships and collaboration thru data sharing (DataONE, 2014).

Developing metadata for counties

The process of metadata creation and management is an incremental process which should be a shared responsibility by both the technical and users. Quality metadata creation is just as important as the care, preservation, display, and dissemination of collections; adequate planning and resources must be devoted to this ongoing, mission-critical activity (Practical Principles for Metadata Creation and Maintenance, 2008).Since metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource.

Counties should make the creation of shareable metadata as a routine part of their work flow. Creation of consistent, standards-based, continuously refreshed and updated metadata enables various department and units within a given county to publish information about their collections and other resources and activities in a timely, efficient manner and to more broadly disseminate that information through union catalogues and other "federated" resources via protocols such as the Protocol for Metadata Harvesting (OAI-PMH)(Practical Principles for Metadata Creation and Maintenance, 2008).

A publication by understanding metadata indicated that many metadata project initiatives have developed tools and made them available to others, sometimes for free. A growing number of commercial software tools are also becoming available. Creation tools fall into several categories:

- Templates allow a user to enter the metadata values into pre-set fields that match the element set being used. The template will then generate a formatted set of the element attributes and their corresponding values.
- Mark-up tools will structure the metadata attributes and values into the specified schema language. Most of these tools generate XML or SGML Document Type Definitions (DTD). Some templates include such a mark-up as part of their final translation of the metadata.



- Extraction tools will automatically create metadata from an analysis of the digital resource. These tools are generally limited to textual resources. The quality of the metadata extracted can vary significantly based on the tool's algorithms as well as the content and structure of the source text. These tools should be considered as an aid to creating metadata. The resulting metadata should always be manually reviewed and edited.
- Conversion tools will translate one metadata format to another. The similarity of elements in the source and target formats will affect how much additional editing and manual input of metadata may be required. Metadata tools are generally developed to support specific metadata schemas or element sets. The websites for the particular schema will frequently have links to relevant toolsets.



Conclusions

This paper sought to bring to light the essence of adopting metadata in the management of the counties in Kenya. The advantages there in enables the various sector or department of the county to co-ordinate share various data necessary in the management of their departments. The paper further summarizes metadata types that are useful in county governance.

Recommendations

Among other recommendations to the study the paper proposed the following recommendations:-

- Successful adoptions of metadata information system in the counties provides a generic framework to the flow of data and information within the counties in Kenya. The internet has created a revolution in the accessibility of information. The development and application of metadata represents a major improvement in the way how information can be discovered and used.
- Metadata should be captured and managed in an appropriate information system that should be available to all of the individuals in the county who need to contribute to it, as well as those who need to use it.
- Creation of consistent, standards-based, continuously refreshed and updated metadata enables various departments of the counties to publish information about their collections and other resources and activities in a timely, efficient manner and to more broadly disseminate that information through union catalogues and other "federated" resources via protocols such as the Protocol for Metadata Harvesting (Practical Principles for Metadata Creation and Maintenance, 2008). making data and information be easily accessible.



1. References

Alex Berson and Larry Dubov. (2007). *Master Data Management and Customer Data Integration for a Global Enterprise*. USA: McGraw-Hill.

Article 6, Devolution and access to Services, The 2010 Constitution of Kenya. Accessed at: http://en.wikipedia.org/wiki/Counties_of_Kenya#cite_ref-1

Article 98, (1) (a), Membership of the Senate, the 2010 Constitution of Kenya. Accessed at :http://en.wikipedia.org/wiki/Counties_of_Kenya#cite_ref-2

Article 97, (1) (b) Membership of the National Assembly, The 2010 Constitution of Kenya

DataONE. (2014, October 29th). *Data Observation Network for Earth*. Retrieved from DataONE: https://www.dataone.org/sites/all/documents/ValueofMetadata.pptx

National Information Standards Organization - NISO (2004). Understanding Metatdata. 4733 Bethesda Avenue, Suite 300: USA.

- Scheepers., L. N. (2001). Information is a management issue. 5th ed. Johannesburg : CSIC. accessed at: http://www.actacommercii.co.za/index.php/acta/article/viewFile/44/44.
- Sirianni, A. (2014, December 6). *The Importance of Data and Information in Business*. Retrieved from DCODE GROUP: http://www.dcode.com.au/blog/the-importance-of-data-and-information-in-business
- Tutorialspoint. (2014, December 15). *tutorialspoint Simple easy learning*. Retrieved from tutorialspoint: http://www.tutorialspoint.com/dwh/dwh_metadata_concepts.htm