Creating a Data Management Infrastructure

IR Taking the Lead to Improve Institutional Data

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Overview

- Early attempts at data management
- Institutional turning point
- Culmination of research and experience
- The proposal and institutional readiness
- Implementing a formal structure
- Conclusions and discussion
The Early Years

- Attempts to address data integrity took various forms:
  - Information “sharing”
  - Committees
  - User’s Groups
  - Formal meetings

- Met with mixed reviews and results
Quit Whining

- President’s Planning Retreat
  - Isn’t that what YOU do?
- Looked at possibilities within the current IT committee structure
- Read stuff
- Preached to the saved
Paving the Cow Path

- Common misconceptions about how to improve data:
  - Need new technology
  - Need more people
  - Need more data
Our Mantra

- Jaacks and Kurtz, 1998

*It is often anticipated that the software will make life easier. The reality is that “paving over the cow path” with new technologies seldom causes significant improvement in productivity. Institutions must streamline processes, eliminate duplication of efforts, and examine outdated or inefficient processes.*
Susan Bostrom, Senior VP Cisco Systems

*The most important thing isn’t the technology. It’s re-thinking and re-designing your business.* (2001)
Buying computers and software is easy: rethinking and redesigning the way we work to take full advantage of them is not.
Paper Chase

- Prepared white paper for President
  - Rationale: mission of IR as authority
  - Background—how we got in this mess
  - Operational systems vs. information systems
  - Definition of data access
  - Examples
Please, Please Do This

- Cabinet should appoint a Data Policy Committee
- Initial charge: to recommend a model for UNLV that applies general principles of data management to shared university data
- Goal: to ensure data integrity and access and to position us for new ERP or data warehouse
Why Do It?

- Improve data integrity and access
- Position us to take advantage of new technology
- Provide mission-critical data to decision-makers in timely manner
A black hole is *defined* to be a region of space-time where escape to the outside universe is impossible. The boundary of this region is a surface called the **event horizon**. This surface is not a physically tangible one, but merely a figurative concept of an *imaginary boundary*. Nothing can move from inside the event horizon to the outside, even briefly.
Meanwhile, Back at the Ranch

- Making data more accessible also serves to improve data quality over time. As people use the data, errors can be corrected as they are found. (Scott Thorne, 2000)
  - Institutional grant to develop a data “mart”
  - Unedited SIS extracts
  - Accessible: .NET application with data dictionary
Back to the Future

- Hired new Vice President for Finance
- Chancellor creates Technology Committee
  decides that we need new administrative systems
- Campus ERP advisory group-- how to ramp up for a new implementation
- Whip out the white (yellowish) paper
The Iron Was Hot

- Re-framed the paper into recommendation
- Presented to ERP advisory committee
- Presented to Cabinet Policy Review group
- Presented to Cabinet with budget
- IR budgeted one position and operating
IT or IR?

YOU HAVEN'T HEARD WHAT THE PROBLEM IS YET; HOW CAN YOU RECOMMEND BUILDING A DATABASE TO SOLVE IT??

WE ALWAYS BUILD A DATABASE.

AND WE'LL NEED COFFEE MUGS FOR THE PROJECT TEAM.

THE PROBLEM IS THAT WE HAVE POOR PROCESSES.

THAT COULD BE THE SLOGAN ON OUR MUGS!
IT or IR?

- Responsibility for the construction and maintenance of the campus information architecture...is far too important to be relegated to a technical solution.
- Maintenance of a data dictionary should be assigned to a non-parochial organization to ensure that it is does not only address the technical aspect of the data.
Own Your Feelings, Not Your Data

- Data is a valuable resource belonging to the University. Data Governance assumes freedom of access to University data by all members of the community, coupled with the responsibility to adhere to all policies and all legal constraints.
What is Data Governance?

- Making strategic and effective decisions regarding UNLV’s information assets.
- Includes:
  - Defining roles and responsibilities for data
  - Establishing data quality policies
  - Creating metadata management practices
  - Arbitrating shared data questions
Groups Comprising Data Governance

UNLV Data Governance Program Structure

Executive Sponsors

Appoint

Data Governance Council

Comprised of Data Stewards
Executive Sponsors

- Executive Sponsors lay the foundation
  - Establish Data Governance Council
  - Provide policy and direction to Council
  - Determine indicators of progress
  - Establish timeline
  - Provide oversight and support on ongoing basis
Executive Sponsors

- Provide policy and direction to Council of Stewards
- Propose Data Policies
  - Access, Usage, Integrity and Integration
- Determine indicators of progress
  - Tied to policies
- Establish timeframe
- Approve communication plan
Data Governance Council

- Composed of Data Stewards, appointed by Executive Sponsors
- Responsible for maintaining data quality/integrity
- Responsible for maintaining the data dictionary/repository
- Creates appropriate training materials for both data administrators and users
- Prepares performance indicator progress reports for Executive Sponsors
Data Governance Council

- Data Stewards will:
  - Establish one point of accountability for each data element
  - Establish common vocabulary to help users know they have the right data
  - Maintain University-wide, and NSHE-wide, values for common reference data
First Policies

- Data Access Policy
- Data Usage
- Data Integrity and Integration
Data Access Policy

- Provide appropriate access to administrative data for employees without unnecessary restrictions

- Progress Indicators
  - Formal establishment of UNLV Security Policy
  - Establish common guidelines for requesting access to information
  - Establish mechanism for resolving differences
Data Usage Policy

- Ensure that the data assets of the University are protected

- Progress Indicators
  - Identification of UNLV, NSHE, Nevada and federal policies and/or legislation that impacts data elements
  - Assignment of security levels to common data elements
  - Develop audit process to monitor usage
  - Formalize consequences of non-compliance
Data Integrity and Integration Policy

- Ensure that UNLV data has a high degree of accuracy and integrity, and that key data elements can be integrated across departments and electronic systems.

Progress Indicators

- Ability to Integrate –
  - Sample or audit data elements in preparation for iNtegrate conversion and report on results

- Create metadata repository/data dictionary
  - Specifications; Tool acquired; stewards entering metadata
Keep It Moving

- DA website
- List serve for feedback on policies
- First 3 policies placed in official format for Cabinet Policy Review Committee
- Next step: naming data stewards
  - Setting up Council
Scary Bedtime Stories

- ERP Site visits confirm importance of process documentation and re-engineering
Scary Bedtime Stories

- Biggest problems:
  - Ignorance of supplemental systems and redundancies
  - Scope of projects did not include data dictionary, data warehouse, reporting solution
If people can access data, they will spend less time gathering information and more time analyzing it. (Scott Thorne, 2000)
Bottom Line

- Data Management is not an IT function
- Data Management requires the support of senior management
- It is a cultural as well as organizational adjustment
- It requires continual work and education on the part of all involved
Benefits

- Advances goal of making UNLV data accurate, timely, relevant, and high quality
- Reduces duplication and associated costs including potential errors
- Increases confidence in data and use in decision-making
Benefits Continued

- Creates an awareness of data as a critical institutional resource
- Brings awareness of connection between data and business processes
- Makes it possible to create a data architecture that supports institutional mission and goals
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