

2019 IMAGING INFORMATICS SUMMIT

Enterprise Data Management Considerations for a Successful AI Journey

Kim Garriott

Principal Consultant, Healthcare Strategies

Logicalis, U.S.

kim.garriott@us.logicalis.com

@kgarriott42

Disclosures

- No financial disclosures

Enterprise Data Management Considerations



Governance



Quality



Enterprise Architecture



User Experience



“Most data scientists spend only 20 percent of their time on actual data analysis and 80 percent of their time finding, cleaning, and reorganizing huge amounts of data, which is an inefficient data strategy.”

-InfoWorld, Sep

2017




Governance



Governance

Responsible for setting the data governance framework

- Evaluating and prioritizing use cases
- Determining data needs
- Developing data policies and guidelines
- Ensures use of standards
- Promoting value of data assets



DATA
IS LIKE
WATER
NEGLECT ITS
QUALITY
AND FEAR THE
INDIGESTION

Adrien Saint, Marketing World Explorer



Six Dimensions of Data Quality

- **Completeness:** Data completeness is the expected comprehensiveness. Data is considered complete if it meets the expected expectations.
- **Consistency:** Data is said to be consistent if all the systems across the enterprise reflect the same information.
- **Accuracy:** Data accuracy is defined as the degree with which data correctly reflects the event in question or the 'real world' object.
- **Timelessness:** It references whether data is available when required.
- **Validity:** Data is valid if it conforms to type, format and range of its definition.
- **Uniqueness:** Every data entry is one of its kind



LEGACY DATA



NEW DATA



ASSESSING &
MONITORING



Legacy/existing sources of data

- Sources
- Access
- Format
- Security
- Utility
- Effort to cleanse
- Can future data collection be influenced?



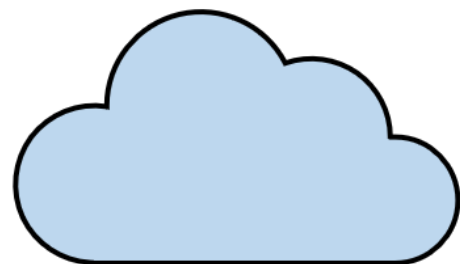
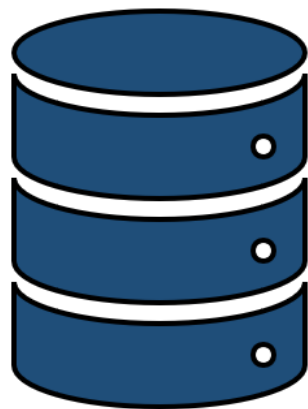
NEW DATA (data that is not captured today)

- What are the minimum CDEs that will be required?
- What standard(s) will be applied?
- How will the data be acquired?
- How will the data be used?



ASSESSING & MONITORING

- High value/high risk – critical function
- Time consuming
- Meaningful data ownership
- Relying on AI may be best & only route



Enterprise Architecture

Main Design Goals

Source: <https://www.acrdsi.org/-/media/DSI/Files/PDFs/AL-LAB-Reference-Architecture-Framework.pdf?la=en>



Unified: a single system infrastructure that is easy to manage across the enterprise



Scalable: a system that can grow with the use cases and study volumes



Fault-tolerant: a system where an individual failure does not impede healthcare delivery



Repeatable: derived from a blueprint relevant to all types of healthcare institutions

Key Components of an AI Compute Environment



- Integrated Systems
- Workflows
- Federated Services
- Core Infrastructure

For complete information please refer to the ACR AI-LAB Reference Architecture Framework

<https://www.acrdsi.org/-/media/DSI/Files/PDFs/AI-LAB-Reference-Architecture-Framework.pdf?la=en>



User Experience

*Machines and people must have appropriate, fast and easy
access to data*

User Experience Considerations

- **Communication, communication, communication**

Developers want clear, precise instructions that are easily translatable into code or pseudo-code. Business development executives provide them with stories and anecdotes.

- **Building trust**
- **Identity & access management**
- **User interface (UI)**
- **Support for a variety of endpoints**
- **Training & skill development**
- **Operational support**

