Data Governance In the Age of Big Data

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Data...

1. Information in raw or unorganized form (such as alphabets, numbers, or symbols) that refer to, or represent, conditions, ideas, or objects. **Data is limitless and present everywhere in the universe.**

2. Computers: Symbols or signals that are input, stored, and processed by a computer, for output as usable information.

**According to Peter Aiken...**

“Data are an organization’s sole, non-depletable, non-degrading, durable asset. Only thru a proficient individual (the CDO):

1. dedicated solely to data asset leveraging,
2. unconstrained by an IT project mindset, and
3. reporting directly to the business

...can organizations expect to leverage their data assets. Data possesses properties worthy of additional investment.”

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Businessdictionary.com

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Why IT (Data) Matters...

IT (Data) is the Fuel for Commerce
IT (Data) Powers Our Daily Lives...

Health Care
Investments
Research
Payments
Shopping
Mail
Education
Hospitality
Car Rental
Parking Meters
Entertainment
Banking
Transportation
Dating
Insurance
Charitable Giving
Security
Terrorism
War
Security
Work

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Keep IT Simple

TRUST
YOUR DATA
Strategic Data Management

DATA
SUPPLY CHAIN
Data Solution Architecture and Integration

ANSWER
YOUR QUESTION
Business Intelligence and Analytics
Keeping IT Simple Requires Enhanced Governance
Is...
the organized oversight and management (stewardship) of essential services necessary to ensure that they meet the needs of, and enable a positive experience for our stakeholders (residents and businesses).

Requires a Governor...
who is the highest ranking executive responsible for orchestrating the delivery of essential services required to ensure a positive experience for our stakeholders.

Is Necessary...
to avoid chaos, provide essential services necessary for peaceful living, business, and commerce in order to ensure a positive experience for our stakeholders.
This Metaphor May Be Helpful...
Structured Data...
Big Data...
A Best Practice Governance Model
Now Think In Terms of Data...

The United States of Data

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<td>Collaboration Data Prep Discovery Shop Analysis</td>
<td>Traditional Relational Data Warehouse</td>
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<td>Data Science &amp; Advanced Analytics</td>
<td>Integration Data Quality ETL</td>
<td>Traditional Reporting &amp; Self-Service Business Intelligence</td>
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Mainframe COBOL and Assembler Data

Open Systems Structured Relational Data

Unstructured Textual Data

Export & Transform To Data Warehouse

External Internal

The Rest of the World

Data Marshalling Yard

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The United States of Data...

- **Locations**
  - Retail Store
  - Care Center
  - Warehouse

- **Customers**
  - Market
  - Segmentation
  - Credit Class

- **Offers**
  - Discounts
  - Incentives
  - Offerings
  - Promotions

- **Channels**
  - Retail, RPS, Business Sales, Care
  - Employee Representative (e.g., RSR, BSR, CSR)

- **Partners**
  - Dealers
  - Manufacturers
  - Suppliers
  - Vendors

- **Billing/Revenue**
  - Billing Account
  - Billing Statement

- **Subscription**
  - Contract
  - Subscription Type
  - Subscription Tenure

- **Products**
  - Handsets
  - Routers
  - SIM Card
  - Premium Content

- **Services**
  - Rate Plans
  - Added Services
  - Features

- **Network**
  - MSISDN
  - IMEI
  - IMSI
  - Carriers

- **Financial Activity**
  - Adjustment
  - Balance Refill
  - Charges
  - Payments
  - Refunds
  - Write-offs

- **Subscription Activity**
  - Activations
  - Deactivation
  - Reactivation
  - Suspend
  - Restore
  - Port-Ins

- **Product Activity**
  - Device Exchanges
  - Device Repairs
  - Device Upgrades
  - SIM Card Changes

- **Service Activity**
  - Rate Plan Migrations
  - Added Service Adds
  - Added Service Remove

- **Network Activity**
  - Billed Voice Usage
  - Billed Data Usage
  - Roaming Settlements
The Rest of the World of Data...
Governance Council
Top-level executive support and funding assurance for Data Governance & Stewardship
Provides overall direction and vision for Governance & Stewardship program

CDO (Governor)
Liaison between the Council and the Lead Stewards. Coordinates Lead Data Stewards and represents them at the Governance Council

Lead Data Stewards
Define and establish stewardship policies. Lead data quality improvement and stewardship adherence via metrics

Core Team

Extended Team

Subject Matter Experts
Steward the data by following policies established by Lead Data Stewards. Typically organized by data domains

Big Data SMEs
Steward data by following policies established by Lead Data Stewards. Organized by data type / source.

Owners
Raises issues and provides feedback

Consumers

Centralized Governance
Federated Stewardship
A High-Level Framework
Gavroshe DM 3.0 Services Model

Data Governance Workbench
- Data Governance Workflow
- Demand Management
- Data Security & Privacy

Enterprise Architecture Modeling
- Enterprise Capabilities
- Data Modeling
- Process Modeling

Enterprise Metadata Repository
- Big Data File-based Metadata
- Business Glossary
- Data Lineage
- Extendable Repository Information Model
- Impact Analysis
- Data Mapping & Position Analysis

Data Quality Management
- Big Data File-based Data Quality
- Data Profiling & Semantic Discovery
- Data Cleansing
- Data Monitoring
- Data Quality Dashboard & Reporting

Data Movement Management
- Movement Methods for Content & Communications Data
- E-T-L for Structured Data
- E-T-L for Unstructured Data
- Data Virtualization
- Scheduler
- Data Replication

Data Life Cycle Management
- Data Usage Monitor
- Archival Storage Management

Master Data Management
- Reference Data Management
- Customer Master Data Management
- Other MDM
Summary

1. Governance of Data in the Big Data context is like governing in a “Globalized World” context…

2. As with governance in the Globalized World context, the governance model is in a state of flux…

3. The Data Governance model, like our Global Governance model must adapt and change to embrace new constructs to enable maximized value extraction in a rapidly changing data and analytics landscape…

4. We can learn by observing and adapting best practices from the global governance theater to the Data Governance theater…

5. Even so, our stakeholders demand that chaos be avoided and services be provided to enable peaceful living, business, and commerce in order to ensure a positive experience…