Session 2(a): Statistical standard, methodology and application in data management and usage

Enterprise Data Governance for Better Data Management

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Outline of Presentation

• Statistical Information for Decision Making
• BNM’s Enterprise Data Governance Framework
• Rethinking Data Governance
**Usage of Statistics for Decision Making**

**Monetary Policy & Economic Development**
1. Promote monetary stability and ensure availability of adequate credit to finance economic activities
2. Provide research support and advice on growth-related issues to the Government

**Investment & Operations**
1. Manage domestic liquidity and exchange rates
2. Manage external reserves to safeguard its value
3. Provide advice and assistance to the Government in the area of debt and fund management

**Regulation**
1. Promote and ensure financial stability
2. Provide competitive environment for local financial industry to be resilient
3. Lead initiatives to enhance access to financing
4. Formulate policies and strategies towards building and positioning Malaysia as a premier integrated Islamic Financial Centre
5. Enhance the financial capability of consumers

**Payment Systems**
Develop policies and strategies to promote reliable, secure and efficient clearing, settlement and payment systems in the country

**Supervision**
Develop, enhance and implement an effective surveillance framework to ensure safety and soundness of financial institutions and to enforce sound practices in them
What Is Enterprise Data Governance?

- Set of policies, procedures and processes and standards to ensure data are formally managed and utilised throughout enterprise.

- Convergence of data management, business process management, risk management and change management surrounding the handling of data.

- A framework that supports the continuous need to improve the quality, consistency, usability, security and availability of data.
## Guiding Principles

<table>
<thead>
<tr>
<th>Principles</th>
<th>Description</th>
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<tbody>
<tr>
<td>Data as an enterprise asset</td>
<td>Data shall be owned and managed like any other assets in the Bank with a lifecycle</td>
</tr>
<tr>
<td>Standardised data definition and standards</td>
<td>Data shall be defined in accordance with applicable industry standards and standardised across the Bank</td>
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<tr>
<td>Single data source</td>
<td>Data shall have an identified primary source</td>
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<tr>
<td>Data quality and integrity</td>
<td>Data quality shall be preserved through active management of data accuracy, integrity and consistency</td>
</tr>
<tr>
<td>Data ownership</td>
<td>Data ownership shall be clearly designated and the designated owner of data is responsible for its quality, currency and timeliness</td>
</tr>
<tr>
<td>Access and security</td>
<td>Authorised users shall be able to access and process data in a controlled and secured manner</td>
</tr>
<tr>
<td>Confidentiality</td>
<td>The confidentiality and privacy of information shall be maintained in accordance with relevant legislations and policies of the Bank</td>
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</table>
## Enterprise Data Governance Framework

<table>
<thead>
<tr>
<th>Quality of Statistics (Value Proposition)</th>
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<tbody>
<tr>
<td>Timeliness</td>
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### Organisation
- Oversight Committee
- Roles & Responsibilities

### Policies & Procedures
- Data Needs Management
- Data Architecture Management
- Metadata Management
- Reference and Master Data Management
- Data Quality Management
- Data Privacy and Security Management
- Data Retention and Archival Management

### Standards
- Metadata
- Reference Codes
- Master Data
- Technology

### Technology/Infrastructure/System Integration

### Legislation
Adopt a centralised data governance structure with clear responsibility and accountability.
Data Governance provides the guidance to ensure that data is managed efficiently to meet the business goals.
### Data Needs Management – Data Request

**Policy 1** - All data requests shall be aligned with the Business Plans and mandate of the Bank

### Data Needs Management – Data Integration

**Policy 2** - The integrity and confidentiality of the source data shall be maintained and protected at all times for any data integration

**Key highlights on procedures:**

1. **DGA and DGS assess, plan and manage data request**
2. **Data request requires justification and relevant approval**
3. **Ad-hoc data request shall meet the specified criteria**

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![Diagram of Data Needs Management]

- **Data Needs**
  - **Data Request**
    - Annual request
    - Ad-hoc request
  - **Data Integration**
    - Data sourcing from other system
    - Creation of new data mart combining data from various systems
Data Architecture Management

Policy 3 - Data model shall conform to the underlying data structure, and consistently maintained to ensure accuracy, relevancy and completeness

Key highlights on procedures:

i. Maintenance of Data Modelling Standards, with reference to Metadata and Master Data

ii. DGA and DGS to conduct impact assessment any request on changes or creation of new model

Frameworks/standards that serve as basis for BNM data modelling:

• Financial reporting standard
• Basel Accord/IFSB Capital Adequacy Standard
• IMF Balance of Payment Manual
• IMF Guides on External Debt Statistics and International Investment Position
• BIS Guide to the International Banking Statistics
## Metadata Management

**Policy 4 -**

- There shall be one single business vocabulary with consistent data name and definition for all data.
- Metadata shall be documented, managed and utilised adhering to a set of predetermined standards and control.

### Components

<table>
<thead>
<tr>
<th>Elements</th>
<th>BUSINESS METADATA</th>
<th>TECHNICAL METADATA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Data Dictionary</td>
<td>Application Name</td>
</tr>
<tr>
<td></td>
<td>• Data Name</td>
<td>• Data Owner</td>
</tr>
<tr>
<td></td>
<td>• Data Definition</td>
<td>• Operating System</td>
</tr>
<tr>
<td></td>
<td>• Semantics</td>
<td>• Database Type</td>
</tr>
<tr>
<td></td>
<td>• Data Frequency</td>
<td>• Server Name</td>
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<tr>
<td></td>
<td>• Creation Date</td>
<td>• Table Structure</td>
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<tr>
<td></td>
<td>• Start Reporting Date</td>
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<td>• End Reporting Date</td>
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<tr>
<td></td>
<td>Data Category</td>
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<tr>
<td></td>
<td>• Data Classification</td>
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<tr>
<td></td>
<td>• iSEC Classification</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data Code</td>
<td></td>
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<tr>
<td></td>
<td>• Basic Item Code</td>
<td>• Derived Formulae</td>
</tr>
<tr>
<td></td>
<td>• Common Data Code</td>
<td>• Verification Rule</td>
</tr>
<tr>
<td></td>
<td>• Derived Formulae</td>
<td>• Validation Rule</td>
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<tr>
<td></td>
<td>• Verification Rule</td>
<td>• Mapping Specification</td>
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<td></td>
<td>• Mapping Specification</td>
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<td></td>
<td>• Business Rules</td>
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<td>• Data Classification</td>
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<td></td>
<td>• iSEC Classification</td>
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</tbody>
</table>

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*Note: The table provides a summary of metadata components and elements, specifically focusing on business and technical metadata.*
**Master Data Management**

**Policy 5 -**

a. There shall be one set of reference and master data used across various systems in the Bank

b. Reference and master data shall be managed and utilised adhering to a set of predetermined standards with structured and consistent controls

**Master Data maintained in MDM:**

- Business Registration Number (SSM)
- Individual Identification Card Number (NRD)
- Financial Institution Code (standard established by BNM)

**Reference Data maintained in MDM:**

- Country Code (ISO)
- Currency Code (ISO)
- Sectorial Code (MSIC)
**Data Quality Management**

**Policy 6 -**

a. Data Owner and Data Steward shall be responsible for the quality of data disseminated to Data User  

b. Only data with a pre-determined degree of acceptability and quality is allowed into the Bank’s environment and accessible by Data User  

<table>
<thead>
<tr>
<th>Data Provider</th>
<th>System</th>
<th>Data Compiler</th>
<th>Data Quality Review Panel</th>
<th>User</th>
</tr>
</thead>
</table>
| • Comply with the reporting guidelines provided by Bank Negara Malaysia  
  • Understand system functionalities and reporting requirements  
  • Conduct internal validation to ensure data accuracy and consistency  
  • Rectify data errors identified or rejected by system and Bank Negara Malaysia | • Develop validation rules in submission system  
  • Perform data validation check  
  • Generate data processing and validation result  
  • Return data errors to reporting entities | • Perform data quality checks via micro and macro analysis  
  • Engage and train reporting entities on reporting requirements  
  • Enhance system to incorporate additional validation rules, where necessary  
  • Update reporting guidelines to enhance clarity on reporting requirements | • Provide independent assessment on data quality  
  • Ensure consistency of data with other indicators and economic/financial developments | • Highlight outliers in data compiled during analysis and research  
  • Ensure data align with international reporting standards (e.g. IFRS and BPM) and policy guidelines |
**Data Privacy and Security Management – Data Access**

Policy 7 -
- a. Confidentiality of data shall be observed at all times and only authorised users shall have access to the data in the application systems
- b. Modification to the data in the application systems shall be effected by authorised users only
- c. Data shall be accessible and available to authorised users whenever required

**Data Needs Management – Data Dissemination**

Policy 8 - The dissemination of data shall be authorised by the relevant authorities in the Bank to facilitate business functions or any other reasons as deemed appropriate by the Bank

**Key highlights on procedures:**

i. Access to data facility or data release to external parties require prior risk assessment

ii. Access to data shall be reviewed periodically
Data Retention and Archival Management

Policy 9 -

a. All data shall be retained and archived in accordance with an established schedule
b. All archived data shall be retrievable in a readable format at any time

Key highlight on procedures:

i. Establishment of Data Retention and Archival Schedule by Data Owner in consultation with Data User
ii. Review of schedule on annual basis

Regulatory references on retention and archival:

• National Archives Act 1966 in particular Section 8
• Limitation Act 1953 in particular Section 6
• Evidence Act 1950
• Income Tax Act 1967 in particular Section 82
• Companies Act 1965 in particular Section 167
• Employment Act 1955 in particular Section 61
• Treasury Circular No.150
Rethinking Data Governance

- Decentralisation (use of clouds etc.) and democratisation of data (through self-service BI, visualisation), with high velocity and variety

- Advanced analytics-driven environment which require fast insight from data

- Maintaining data privacy, quality and integrity with the advent of network storage and new technology trends
Thank You