



# Statistical Compilation and Data Management Framework: Malaysia's Experience

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### **Session Title: Harnessing Technology for Effective Financial Inclusion Measurement**

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**BANK NEGARA MALAYSIA**  
CENTRAL BANK OF MALAYSIA

# Outline of Presentation

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1. Statistical Compilation and Management Framework
2. Financial Inclusion Data Collection
3. Data Governance and Support Services



# Role of statistics... supporting surveillance and policy formulation

## 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

## Supervision

Develop, enhance and implement an effective surveillance framework to ensure safety and soundness of financial institutions and to enforce sound practices in them

## Payment Systems

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



# Statistical compilation framework

## Statistics Compiled

1. Banking Statistics
2. Insurance Statistics
3. Credit & Charge Card Operations
4. Development Financial Institutions Statistics
5. External Sector Statistics
6. Macroeconomics Statistics
7. Credit Reports

## Data Management

1. Data Origination
2. Data Quality and Integrity
3. Data Dissemination
4. Data Integration
5. Data Change Management
6. Metadata Management
7. Retention and Archiving

## Users

### Internal Departments

1. Monetary and Economic
2. Regulation
3. Supervision
4. Investment Management and Foreign Exchange Administration
5. Payment Systems
6. Financial Intelligence

### External

1. International Organisations
2. Department of Statistics Malaysia
3. Government Agencies
4. Financial Institutions
5. Public



# Statistical information and interlinkages

## External Sector Flows and Stock

1. Non-resident Counter Party Profile
  - Name of Non-residents
  - Non-resident ID
  - Institutional Sector
  - Business Sector
  - Relationship
  - Non-residents
2. Investment Information
  - Type of Instruments
  - Country
  - Currency
3. External Assets & Liabilities Position
  - Opening Position
  - Transactions
  - Valuation & Other Charges
  - Closing Position
  - Investment Income

## Details of Financial Assets and Liabilities

- |  |  |   |
|--|--|---|
| <b>1. Securities</b> <ul style="list-style-type: none"> <li>• Maturity</li> <li>• Financing Concept</li> <li>• Collateral</li> <li>• Lender</li> <li>• Type/Instruments</li> <li>• Rating</li> <li>• Stock</li> <li>• Issuance Date</li> </ul> | <b>2. Loans</b> <ul style="list-style-type: none"> <li>• Facility</li> <li>• Sector</li> <li>• Purpose</li> <li>• State</li> <li>• Maturity</li> <li>• Country</li> <li>• Currency</li> <li>• Financing Concept</li> </ul> | <b>3. Deposits</b> <ul style="list-style-type: none"> <li>• Customer Type</li> <li>• State</li> <li>• Maturity</li> </ul> |
| <b>4. Assets/Liabilities</b> <ul style="list-style-type: none"> <li>• Fund</li> <li>• Business Class</li> </ul>  |  |   |

## Credit Information

1. Application Details
2. Loan Details
  - Approval Date/Limit
  - Facility Type
  - Purpose of Loan
  - Financing Concept
  - Repayment Term
  - Interest/Rebate Rate
  - Type of Pricing
  - Maturity Date
3. Account Position
  - Outstanding Balance
  - Months in Arrears
  - Installments In Arrears
  - Amount Undrawn
  - Account Status
  - Loan Sold to Secondary Market under SBBA
  - Amount Disbursed
  - Amount Repaid
4. Provision
  - Impaired Loan Tagging
  - Month In Arrears
  - Principal Outstanding
  - Interest/Income Outstanding
  - Other Charges
  - Individual Impairment Provision
  - Impaired Loan Written-back/Written-off
5. Account Collateral
6. Legal Action

## I. Financial Assets & Liabilities

- |               |             |
|---------------|-------------|
| 1. Equity     | 4. Deposits |
| 2. Securities | 5. Others   |
| 3. Loans      |             |

## III. External Sector

## IV. Macro-economics

- |            |             |
|------------|-------------|
| • Real     | • Financial |
| • External | • Fiscal    |

## II. Credit

## Entity Profiles

- |                                     |                          |
|-------------------------------------|--------------------------|
| 1. Name                             | 4. Resident/Non-Resident |
| 2. ID/Registration No.              | 5. Corporate Status      |
| 3. Nationality/Country of Operation | 6. Industrial Sector     |



# Statistical submission and management... leverage on IT

Current systems are by subject areas and not fully integrated. All statistics are electronically submitted and managed as follows:

## Reporting

1. Financial Assets & Liabilities (aggregated reporting by institutions)
  - i. Banking
  - ii. Insurance/Takaful
  - iii. Payments
2. Credit (transactional reporting by borrowers and accounts)
3. External Sector (transactional reporting by individuals and institutions)
4. Macro-economics (secondary data from national statistics office)

## Submission and storage

1. Individual systems (7) by banking, insurance/Takaful and payments statistics.  
  
Integrated storage (2) for banking and insurance/Takaful.
2. Individual system (3) for credit data and as credit bureau.  
  
Data mart (1) for analysis and surveillance.
3. Individual system (1) for external sector statistics for analysis and surveillance.
4. Data mart (1) for analysis and surveillance.

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## Technology

1. Statistical systems developed based on business requirements to support submission, processing, storage and dissemination.
2. Integrated storage and data marts leverage on Business Intelligence (BI) tools, i.e. Cognos Impromptu and Powerplay, SAS, Business Objects and TM1 to facilitate ease of data mining and retrieval.



# Moving towards integrated solution...Integrated Statistical System (ISS)

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## Objective

A single platform for effective and efficient data management to meet the Bank's business needs and desired outcomes

## Deliverables

An integrated statistical system with agile IT infrastructure for end-to-end data management from data submission, storage to dissemination for all subject areas

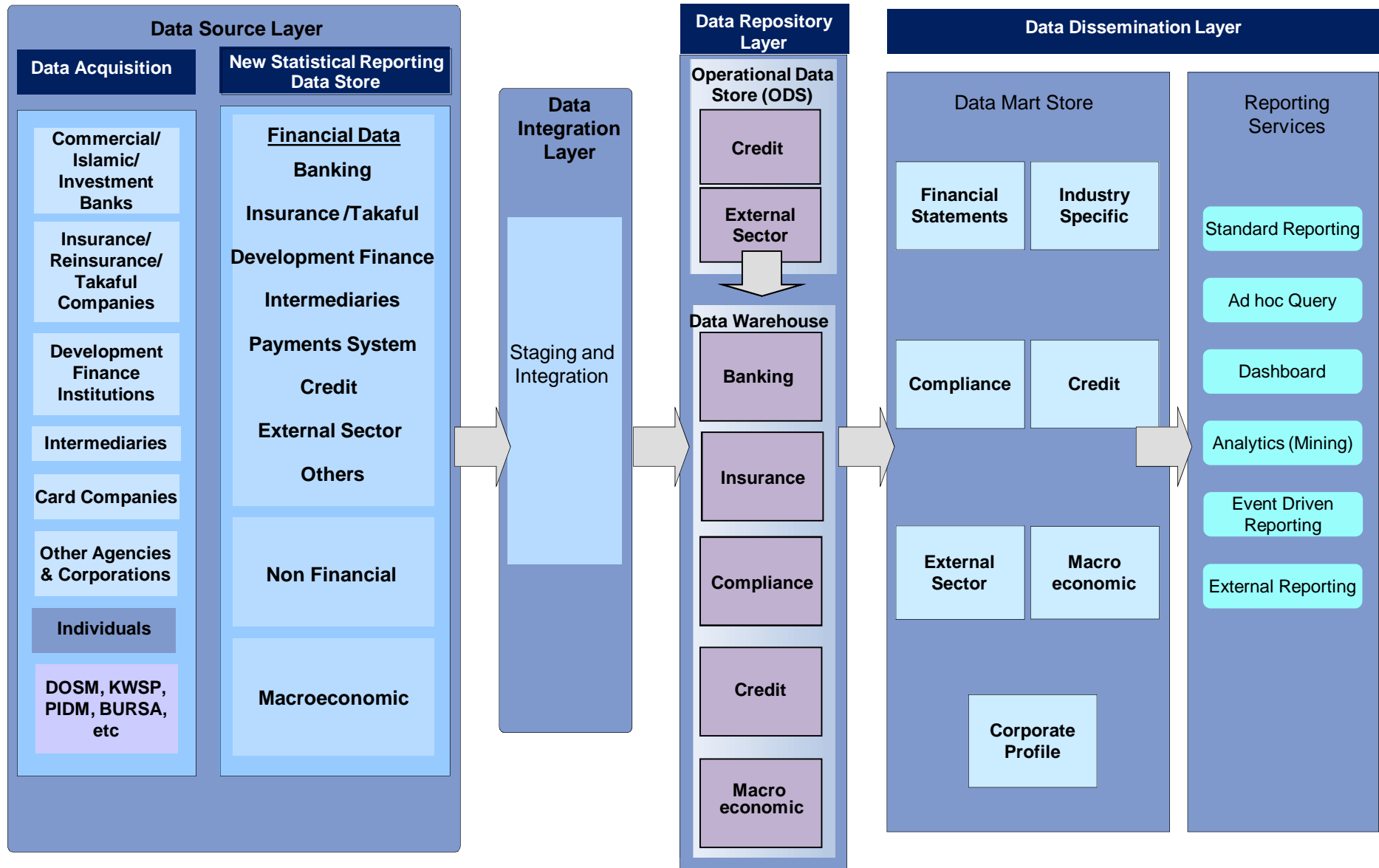
*- for full completion by 2018*

## Benefits

1. More efficient data management Bank-wide
2. Easy and fast access to timely, credible and relevant data
3. Reduced reporting burden by eliminating data duplication
4. Ease of IT maintenance and support

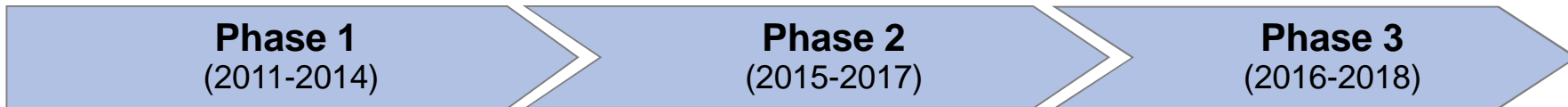


# ISS Project Overview ...architecture and design





# ISS Implementation Phases



## 1. Standard Platform for Data Submission to BNM by All Reporting Entities

<input type="checkbox"/> <b>Statistics on:</b> <ul style="list-style-type: none"> <li>▪ Banking Institutions</li> <li>▪ Payment System Operators</li> <li>▪ Devt Financial Institutions</li> </ul>	<input type="checkbox"/> <b>Statistics on:</b> <ul style="list-style-type: none"> <li>▪ External sector statistics</li> <li>▪ Macro-economic data (from government agencies)</li> </ul>	<input type="checkbox"/> <b>Statistics on:</b> <ul style="list-style-type: none"> <li>▪ Insurance Companies, Takaful Operators and Intermediaries</li> <li>▪ Credit</li> </ul>
<ol style="list-style-type: none"> <li>2. End-to-end IT infrastructure for all components of ISS</li> <li>3. Centralised data repository and migration of historical banking, payments and development finance data</li> <li>4. Statistical information portal for banking, payments and development finance data</li> <li>5. Enhancements and interfaces from/to legacy statistical systems</li> </ol>	<ol style="list-style-type: none"> <li>2. Migration of external sector and macroeconomic data</li> <li>3. Statistical information portal for external sector and macroeconomic data</li> <li>4. Interfaces from/to legacy statistical systems</li> </ol>	<ol style="list-style-type: none"> <li>2. Migration of historical insurance, takaful, intermediaries and credit data</li> <li>3. Statistical information portal for insurance, takaful, intermediaries, and credit data</li> <li>4. Develop business continuity plan and set up recovery environment</li> <li>5. Decommission of legacy statistical systems</li> </ol>



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2. Financial Inclusion Data Collection
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# Financial inclusion data collection... Malaysia's experience

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## 1. Financial Access Survey

- BNM participates in the annual FAS survey conducted by the IMF

## 2. Basic Banking Products

- BNM surveys banking and development financial institutions on a half-yearly basis on the number of basic savings account and basic current accounts opened by individuals and SMEs.

## 3. Financial Inclusion Survey

- BNM collects information on access to financing, deposit accounts and insurance products from all licensed financial institutions on an annual basis (from Supply Side).



# Financial inclusion statistics... (1)

## 1. Sources and indicators of IMF Financial Access Survey

Department	Unit	Source	Data description	Reporting entity
JPS	Banking	FICPS/FISS <i>Slides 22-23</i>	<ul style="list-style-type: none"> <li>- Number of Institutions*</li> <li>- Number of Branches*</li> <li>- Number of Deposit Accounts</li> <li>- Number of Loan Accounts of which: SME accounts household accounts</li> <li>- Outstanding Deposits of which: household accounts</li> <li>- Outstanding Loans of which: SME &amp; household accounts</li> </ul>	Commercial, Islamic and Investment Banks
	Credit	CCRIS <i>Slide 24</i>	Number of Borrowers (with following criteria): <ul style="list-style-type: none"> <li>• Only on balance sheet borrowers</li> <li>• Exclude loans sold to third parties</li> <li>• Borrowers of loans outstanding in CCRIS that is comparable to FISS</li> </ul>	Commercial, Islamic and Investment Banks
	Insurance	ICSS/TOSS <i>Slides 25-26</i>	<ul style="list-style-type: none"> <li>• Number of insurance policy holders</li> <li>• Number of insurance policies</li> </ul>	Insurance corporations & Takaful operators



## Financial inclusion statistics... (2)

### Sources and indicators of IMF Financial Access Survey (cont'd)

Department	Data description	Reporting entity
UPPP (RSA)/JDSP	<ul style="list-style-type: none"> <li>Number of ATM Networks</li> </ul>	Commercial and Islamic Banks
JKPE	<ul style="list-style-type: none"> <li>Number of ATMs</li> <li>Number of branches</li> <li>Number of loan accounts of which: Individuals SMEs</li> <li>Number of deposit accounts of which: Individuals</li> <li>Outstanding Deposits of which: Individuals</li> <li>Outstanding Loans - SMEs</li> </ul>	DFIs (BSN, Bank Rakyat & Agrobank)

### 2. Sources and indicators of Basic Banking Products

Department	Unit	Source/System	Data description	Reporting entity
JPS	Banking	Survey response collected via email	<ul style="list-style-type: none"> <li>Number of basic savings account and basic current accounts opened by individuals.</li> </ul>	<ul style="list-style-type: none"> <li>Banking and development financial institutions</li> </ul>



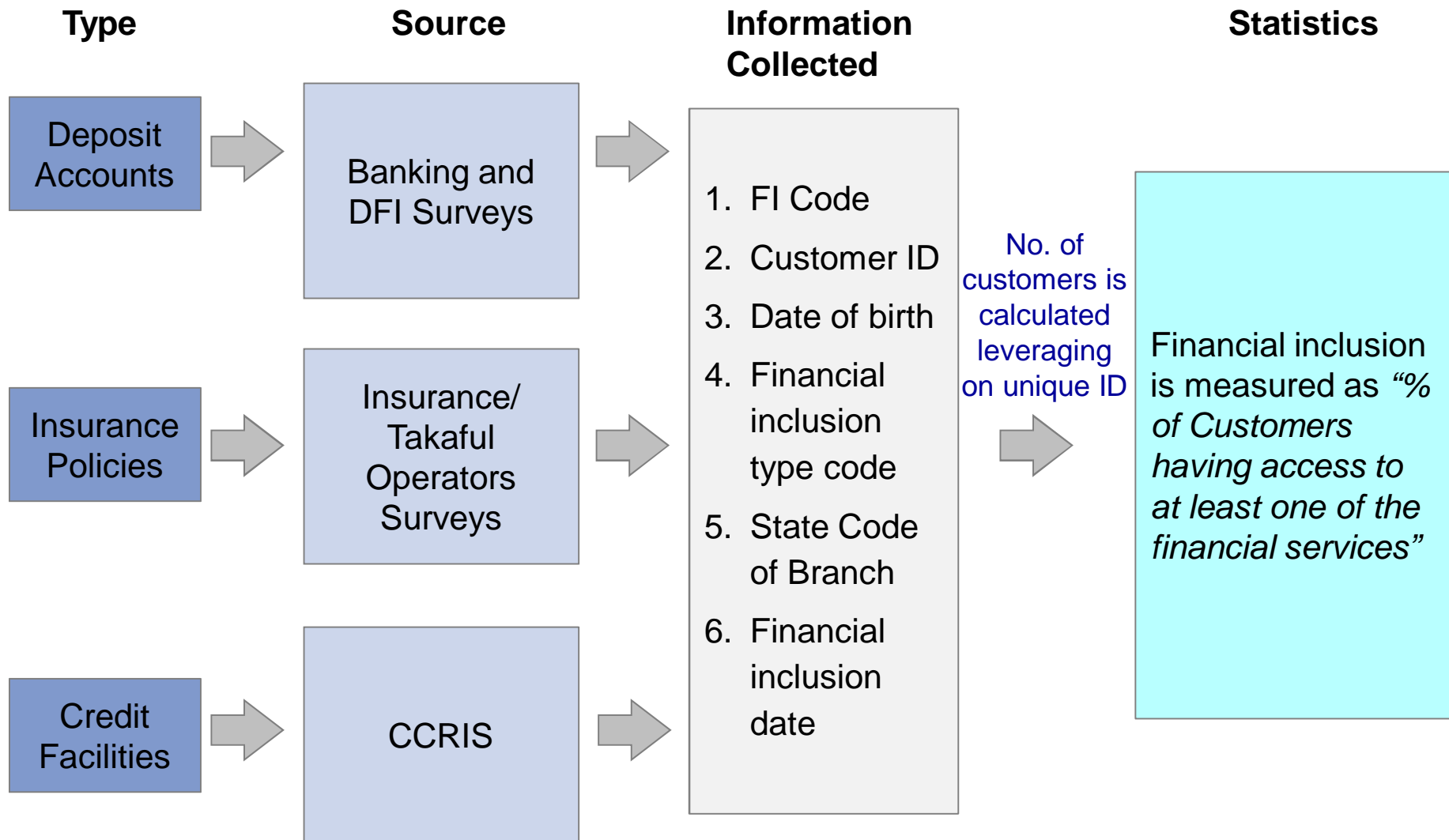
# Financial inclusion statistics... (3)

## 3. Sources and indicators of Financial Inclusion Survey (from Supply Side)

Department	Unit	Source/System	Data description	Reporting entity
JPS	Credit	CCRIS	<ul style="list-style-type: none"> <li>All types of financing accounts maintained by Malaysian individuals, irrespective of age (e.g. loans)</li> </ul>	<ul style="list-style-type: none"> <li>Commercial banks</li> <li>Islamic banks</li> <li>Investment banks</li> <li>Development financial institutions</li> </ul>
	Banking	Survey response saved into CD	<ul style="list-style-type: none"> <li>All types of active deposit accounts maintained by Malaysian individuals, irrespective of age (e.g. savings account, current account).</li> </ul>	
	Insurance	Survey response saved into CD	<ul style="list-style-type: none"> <li>Life Insurance Policies/Family Certificates (Plans) and Financing subscribed by the Malaysian Individuals, irrespective of age</li> </ul>	<ul style="list-style-type: none"> <li>Insurance companies</li> <li>Takaful operators</li> </ul>



# Financial inclusion statistics survey... from Supply side



\* Refer to adult population (age >15 years old)



# Outline of Presentation

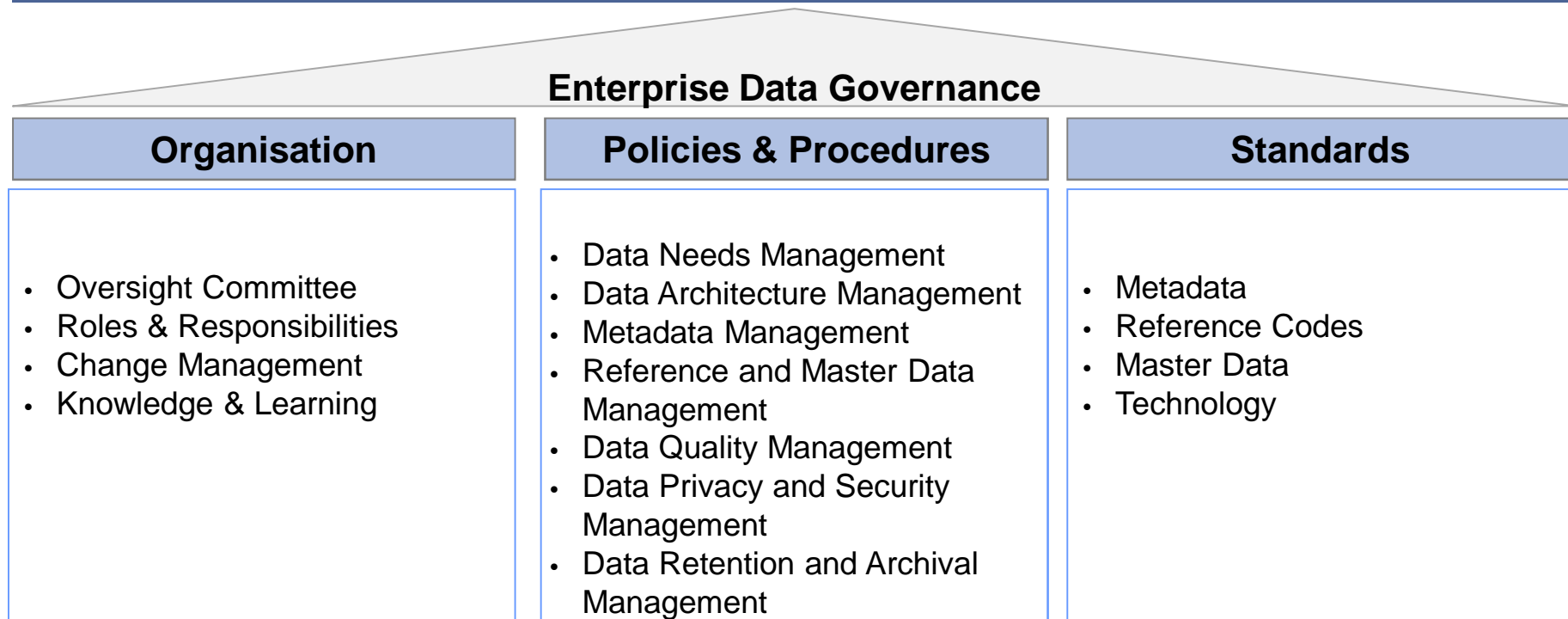
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1. Statistical Compilation and Management Framework
2. Financial Inclusion Data Collection
3. **Data Governance and Support Services**

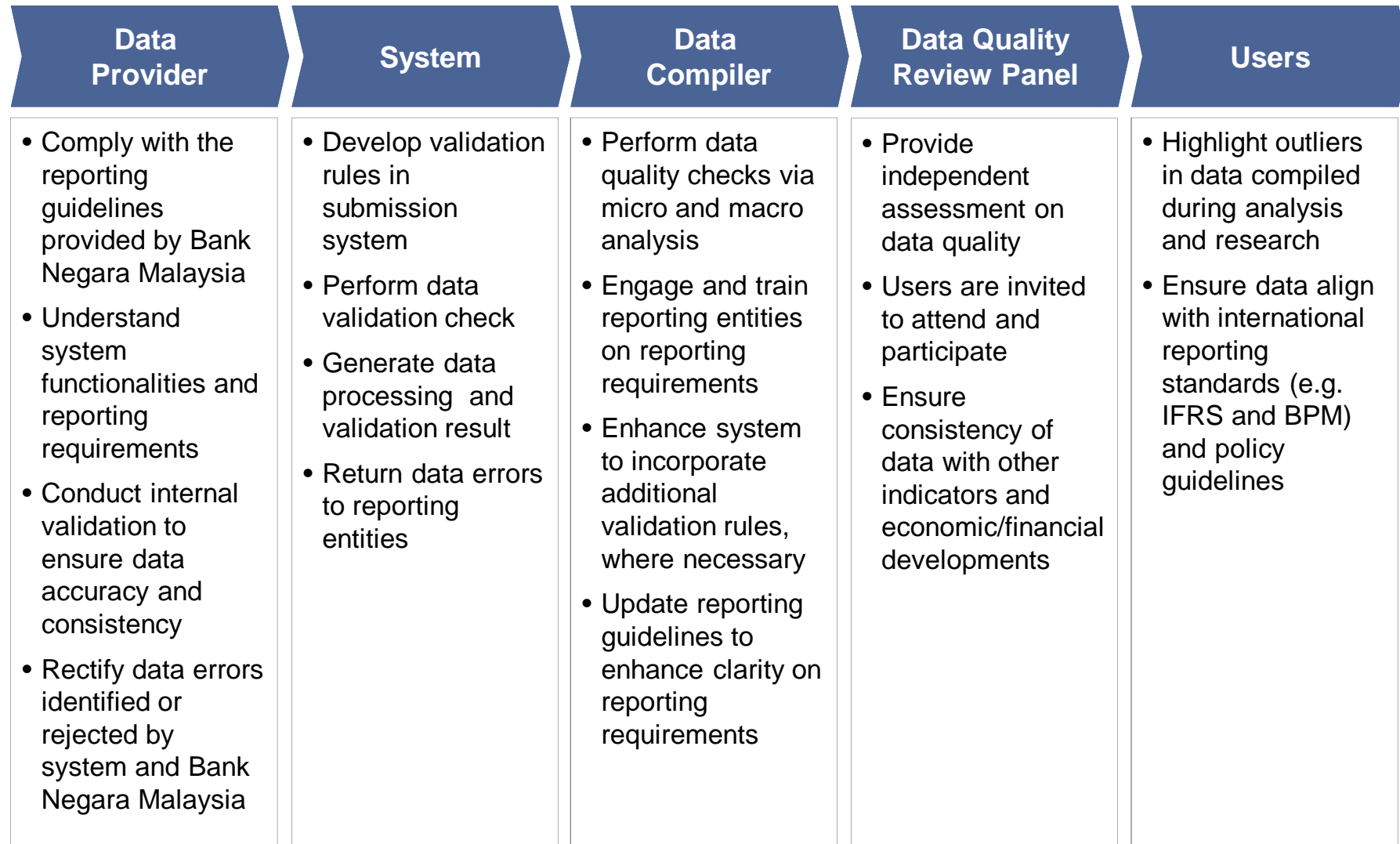




# Enterprise data governance... discipline in data management



# Comprehensive data quality assurance process



# Dissemination and communications

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## 1. Reports

- Standard reports
- Filterable by common dimensions
- View data at granular level based on access rights

## 2. Analytical tools

- Users granted access to Business intelligence tools such as Cognos Impromptu/ Powerplay, SAS, Business Objects and TM1 to facilitate generation of data by different dimensions
- Able to view to transactional details

## 3. Publications

- Statistics collected are published in:
  - BNM's periodic reports such as the Quarterly Bulletin and Annual Report
  - Reports of international agencies such as IMF, BIS and World Bank



# Comprehensive support to stakeholders

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1. Classrooms and hands on training to users
  - Reporting requirements
  - Data items and database structure
  - System and business intelligence tools
2. Clarification and assistance via telephone, email and face to face discussion
3. Focus group meeting and discussion
4. Alert on significant development in data
5. Report generation and preparation



**Thank you**

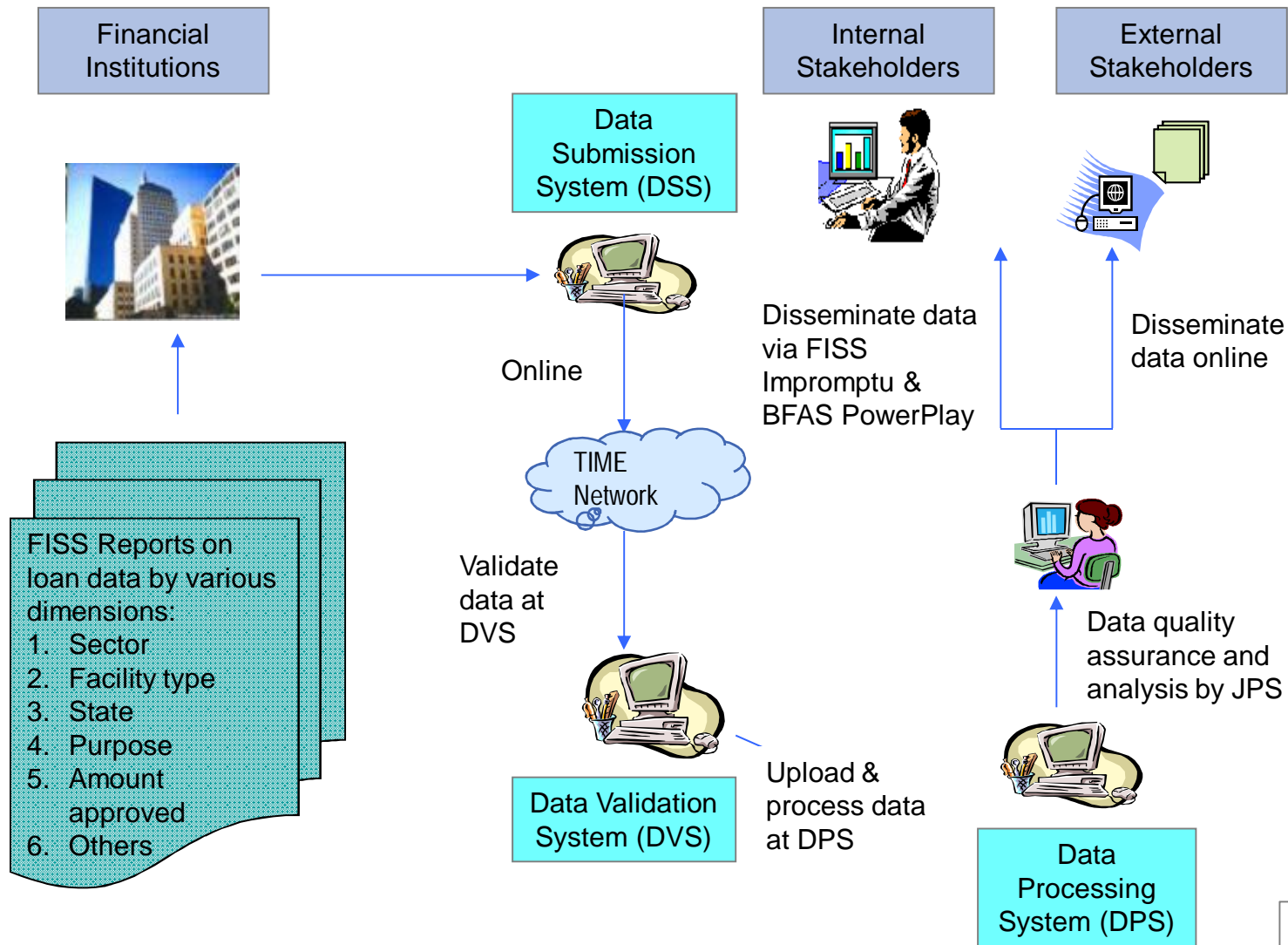


# Statistical systems for submission and storage

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System	Description	Data Coverage
<b>FISS</b>	Financial Institutions Statistical System	Financial statistics which include income, expenses, assets, liabilities, compliance and payments data of banking institutions
<b>RWCAF</b>	Risk Weighted Capital Adequacy Framework	Capital, credit, market and operational risks management data of banking institutions
<b>DFISS</b>	Development Financial Institutions Statistical System	Financial statistics which include income, expenses, assets and liabilities data of DFIs prescribed under DFIA 2002
<b>CCOSS</b>	Card Companies Statistical System	Financial statistics which include income, expenses, assets, liabilities and card business transactions data of card issuers
<b>IFAS</b>	Insurance Financial Analysis System	Financial statistics which include income, expenses, assets, liabilities, premiums/contributions, claims and commissions data of insurance companies and takaful operators
<b>TOSS</b>	Takaful Operators Statistical System	
<b>IBASS</b>	Insurance Brokers and Adjusters Statistical System	Financial statistics which include income, expenses, assets, liabilities, premium and brokerage data of insurance brokers and adjusters
<b>INSIDES</b>	Information and Surveillance System for Debt Securities	Private and public debt securities which include bonds and notes, money market, govt. securities etc.
<b>CCRIS</b>	Centralised Credit Information System	Credit information of borrowers, covering loan applications, outstanding, drawdown/repayment, and collateral at account level.
<b>BCIDM</b>	Borrower Credit Information Data Mart	Credit information of borrowers, covering domestic and external borrowings as well as debt securities issued
<b>SCRIBS</b>	System for Credit Information and Bureau Services	Credit report of individual borrowers
<b>DCHEQS</b>	Dishonoured Cheque Information System	Information on dishonoured cheques issued by customers of licensed banks
<b>ITEPS</b>	International Transactions and External Position System	Cross-border flow of funds and external assets and liabilities of banking and non-bank sectors
<b>FEMS</b>	Financial and Economic Management System	Information on real, fiscal, financial and external sector data with breakdown by institutional sector, economic sector, countries etc.

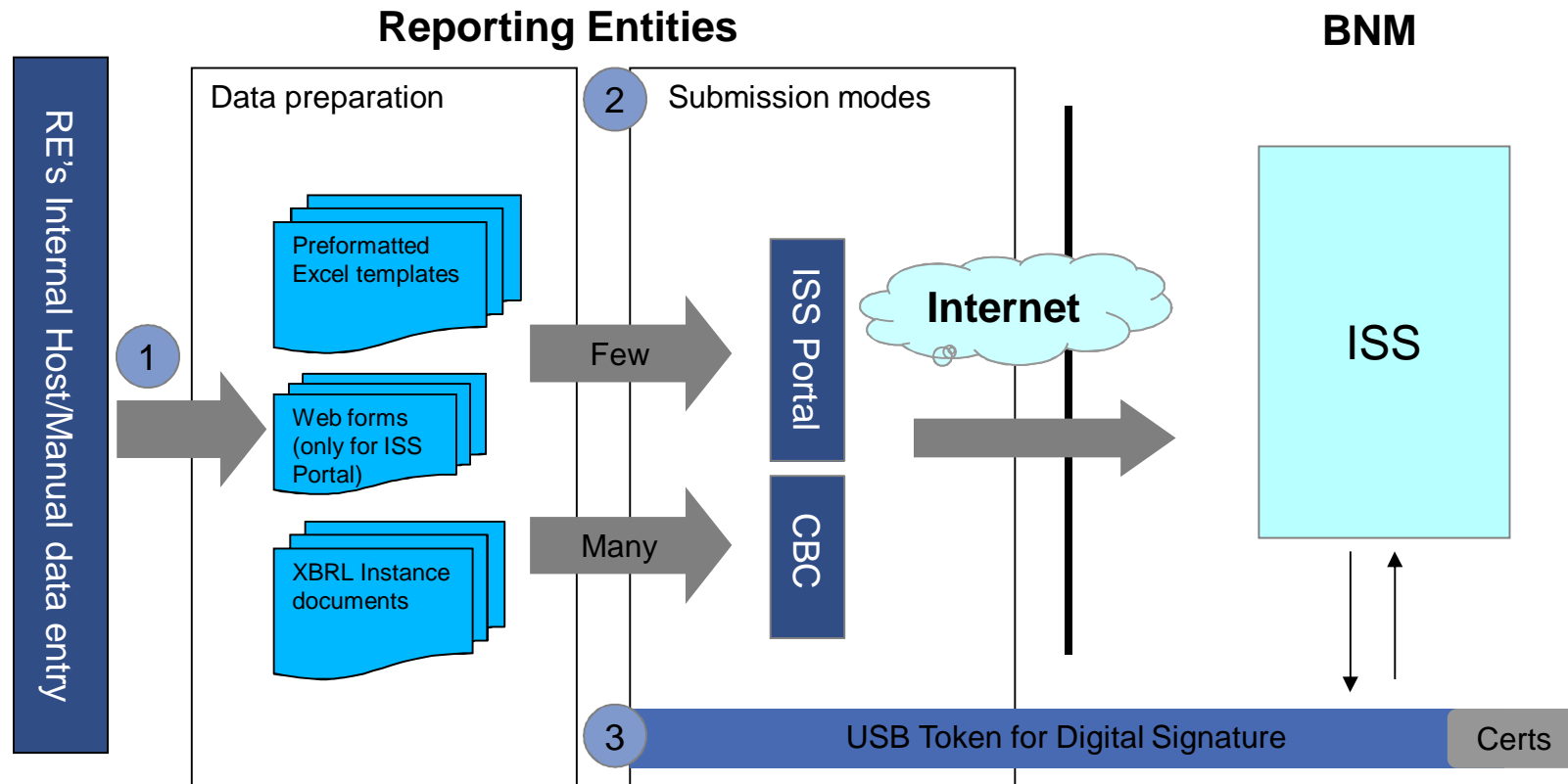
# Overview of FISS reporting



Slide 12



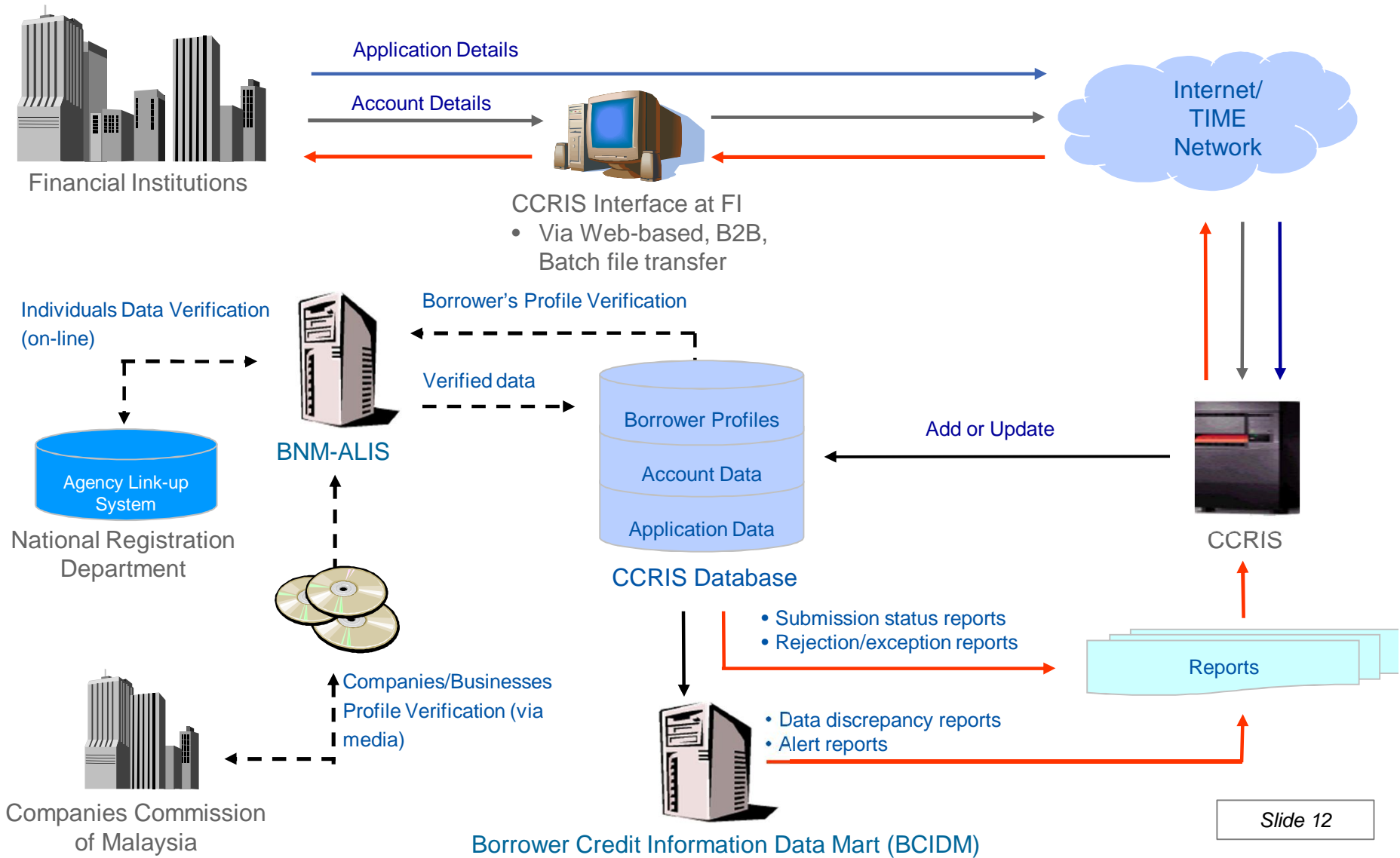
# Overview of ISS Submission Process



Slide 12



# Overview of CCRIS...a real-time online credit information



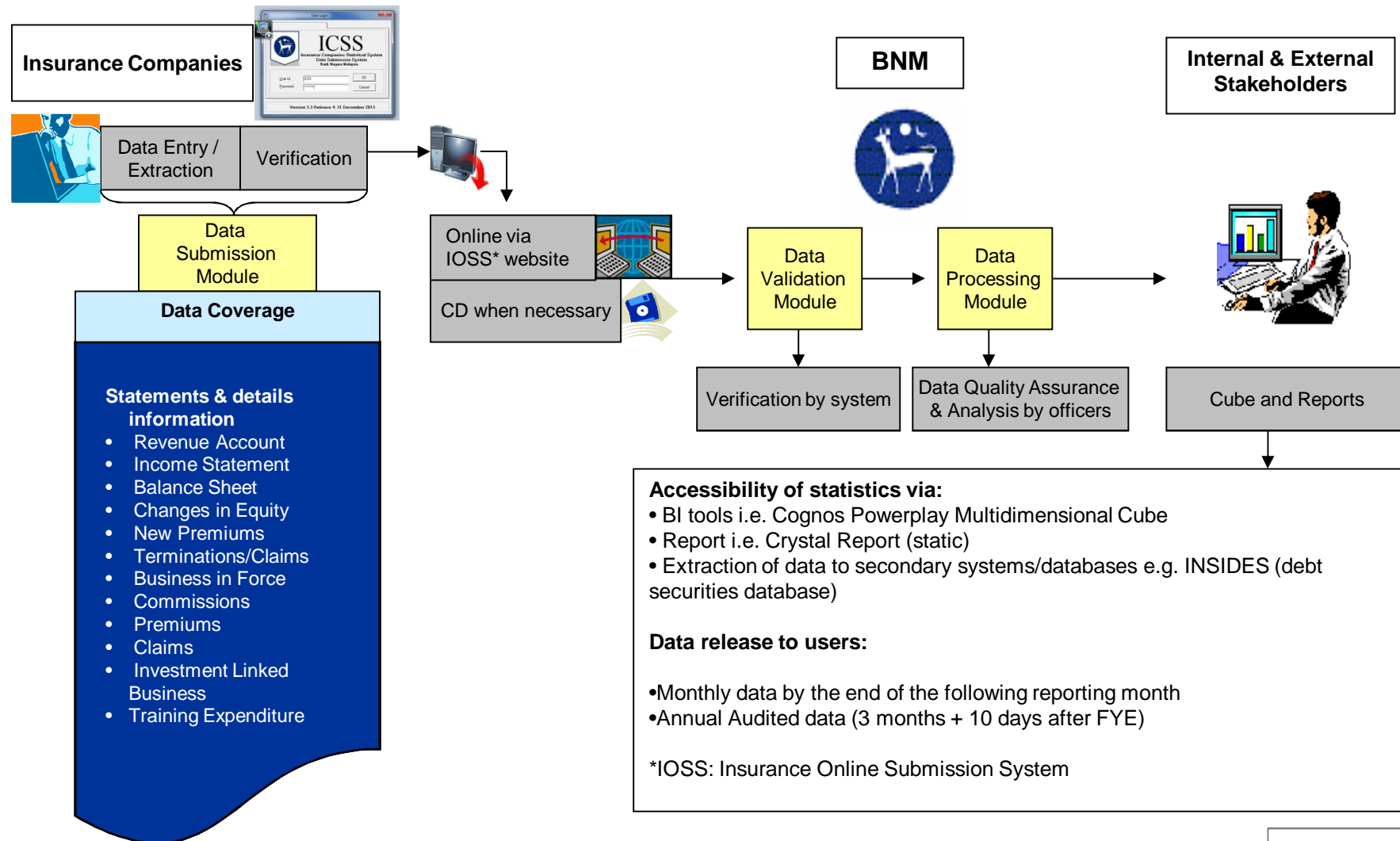
Slide 12





# Overview on ICSS

Application system for insurance data compilation...

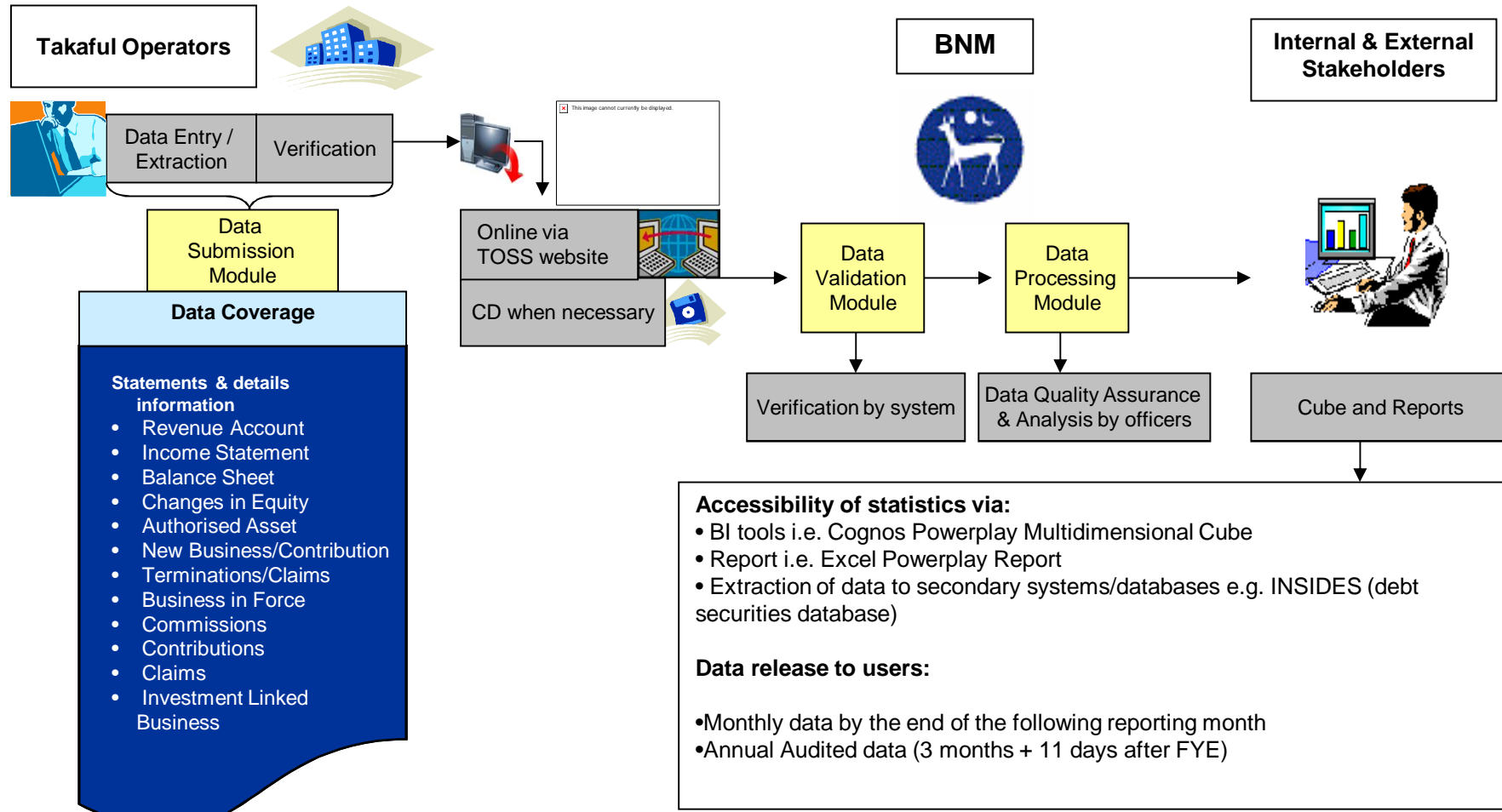


Slide 12



# Overview on TOSS

Web-based application for Takaful data compilation...



Slide 12

