



WHY LOCAL CURRENCY BOND MARKET IS IMPORTANT

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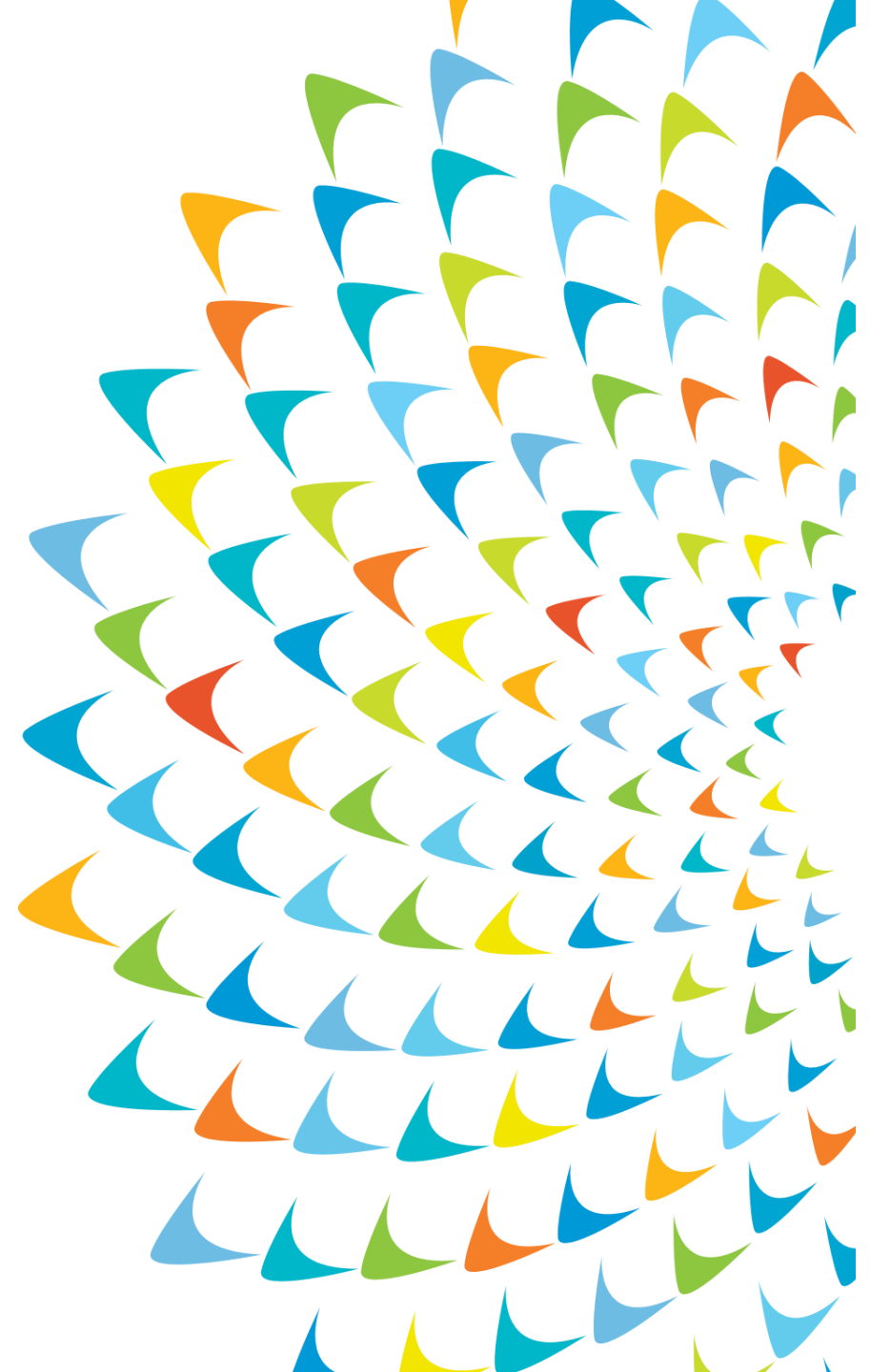
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Workshop on Local Currency Bond Market Development

29 March 2019, Ulaanbaatar, Mongolia



1. OVERALL FRAMEWORK OF THE ASIAN BOND MARKETS INITIATIVE (ABMI)
2. EFFORTS MADE BY SELECTED MEMBER COUNTRIES
 - ❖ THAILAND
 - ❖ MALAYSIA
3. NECESSARY BUILDING BLOCKS TO DEVELOP A LOCAL CURRENCY BOND MARKET

(Chairman's Press Release on the Asian Bond Markets Initiative, 1 August 2003)

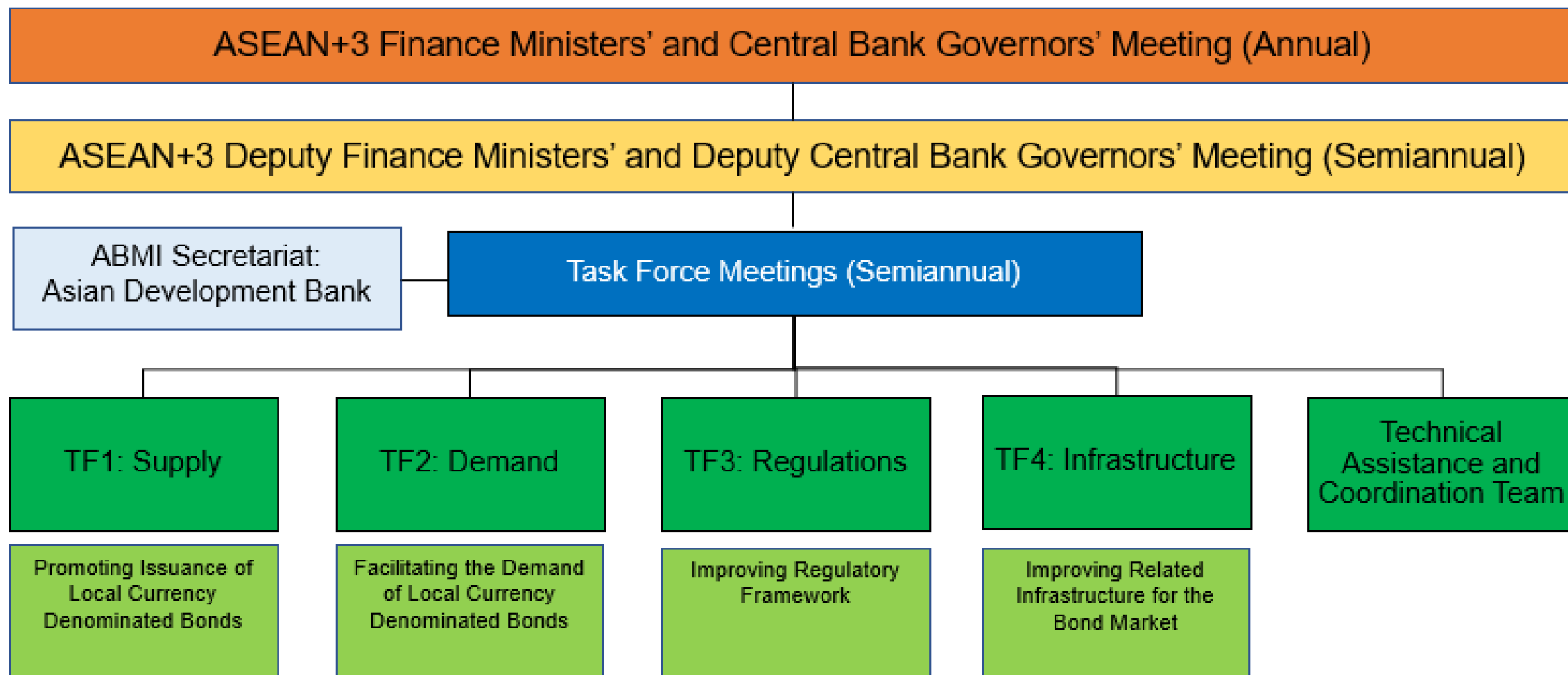
“ABMI aims to develop efficient and liquid bond markets in Asia, which would enable **better utilization of Asian savings for Asian investments.**”

“The ABMI would also contribute to the **mitigation of currency and maturity mismatches** in financing. “

ABMI contributes to financial stability by creating multiple channels of financing



STRUCTURE OF THE ASIAN BOND MARKETS INITIATIVE

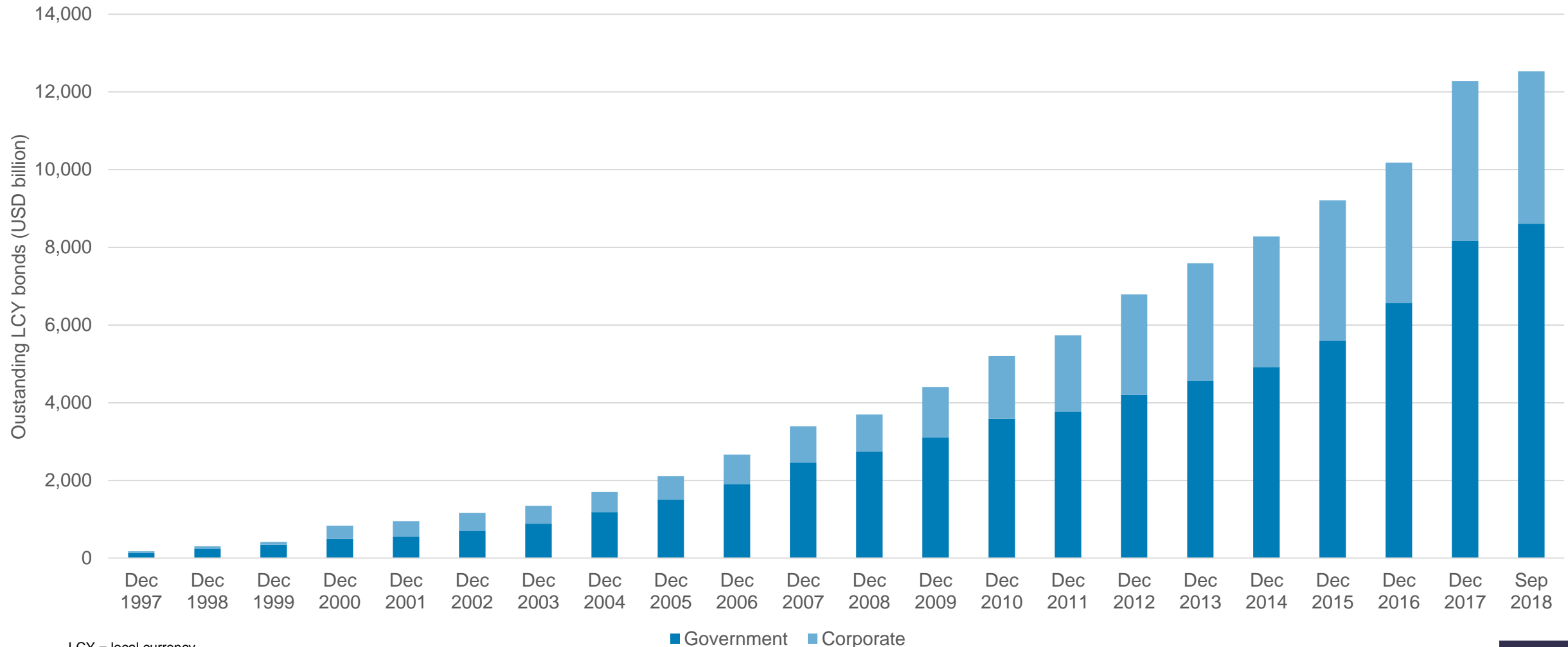


ABMI = Asian Bond Markets Initiative; ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; TF = Task Force.

Source: ABMI Secretariat



EMERGING EAST ASIAN LOCAL CURRENCY BOND MARKETS ARE GROWING



LCY = local currency.

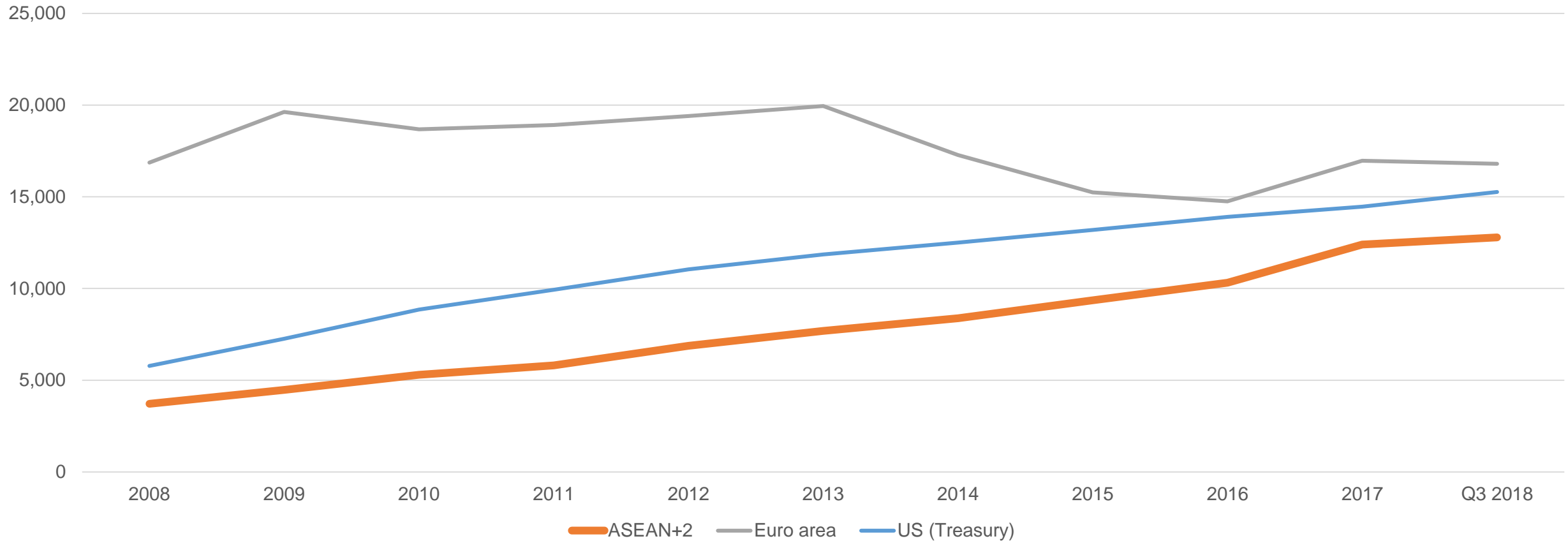
Note: This figure contains bond market data for the five original members of ASEAN (Indonesia, Malaysia, Singapore, Thailand, and the Philippines) plus the People's Republic of China; Hong Kong, China; the Republic of Korea; and Viet Nam.

Source: AsianBondsOnline.



AND IS NOW COMPARABLE TO THE EURO AREA

SIZE OF LOCAL CURRENCY BOND MARKETS



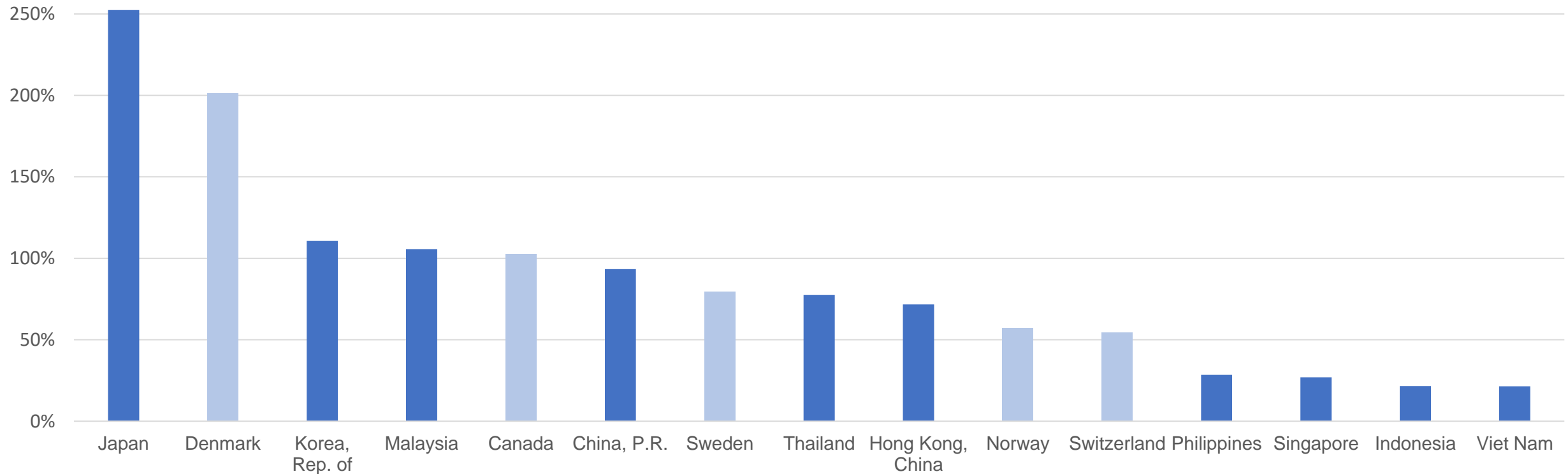
Notes: ASEAN+2 refers to ASEAN plus the Republic of Korea; Hong Kong, China; and People's Republic of China. Euro area refers to Euro-denominated debt securities issued by Euro area residents. US (Total) includes the following types of bonds: Municipal, Treasury, Mortgage Related, Corporate Debt, Federal Agency Securities, Money Markets, and Asset-Backed. US (Treasury only) includes Bills, Notes, Bonds, TIPS, and FRN.

Sources: AsianBondsOnline, CEIC, European Central Bank, International Monetary Fund, and Securities Industry and Financial Markets Association.



SOME OF THE ASIAN LCY BOND MARKETS HAVE DEVELOPED AND HAVE BECOME MUCH DEEPER

SIZE OF DOMESTIC BONDS OUTSTANDING AS A SHARE OF GDP FOR ASEAN+3, CANADA AND SELECTED EUROPEAN ECONOMIES

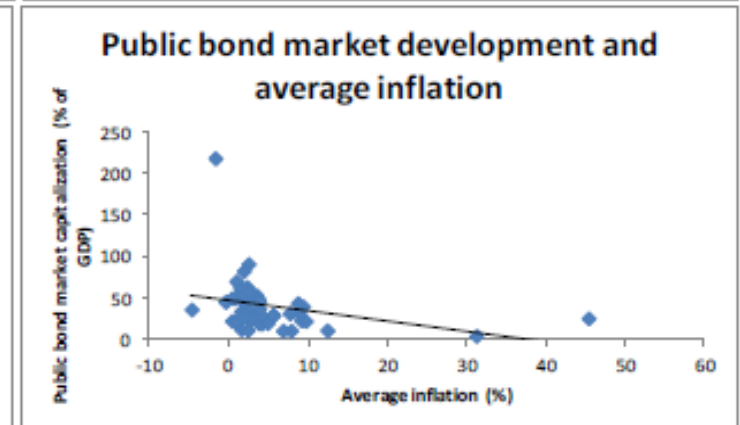
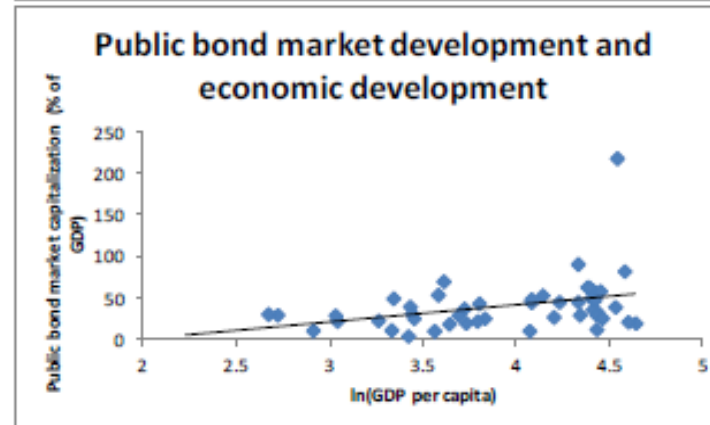
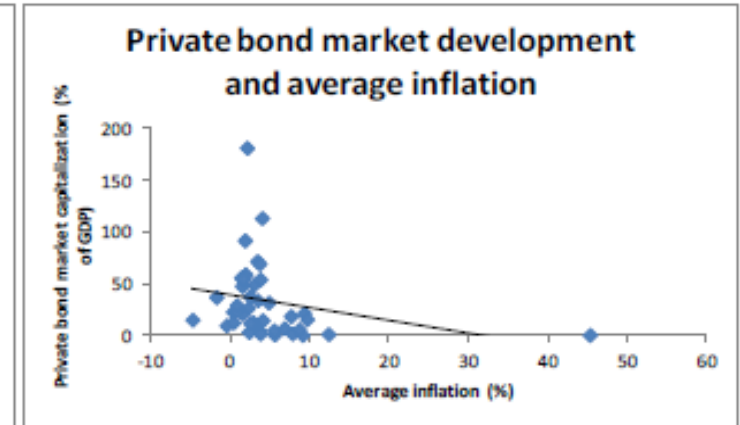
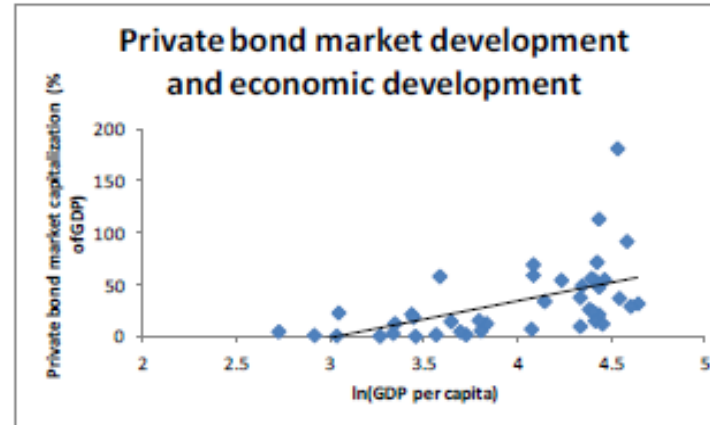
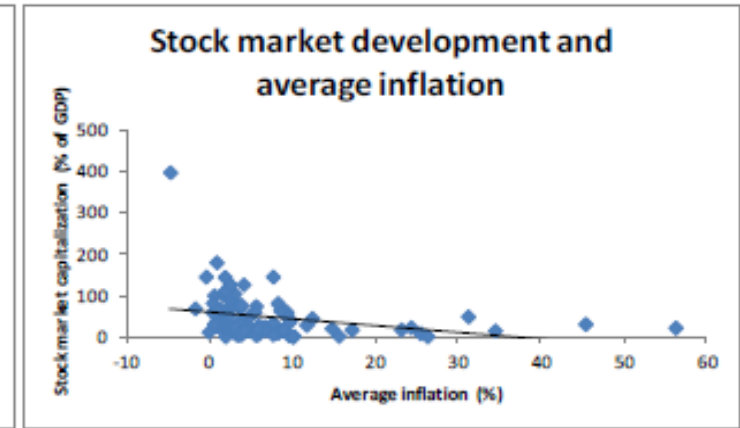
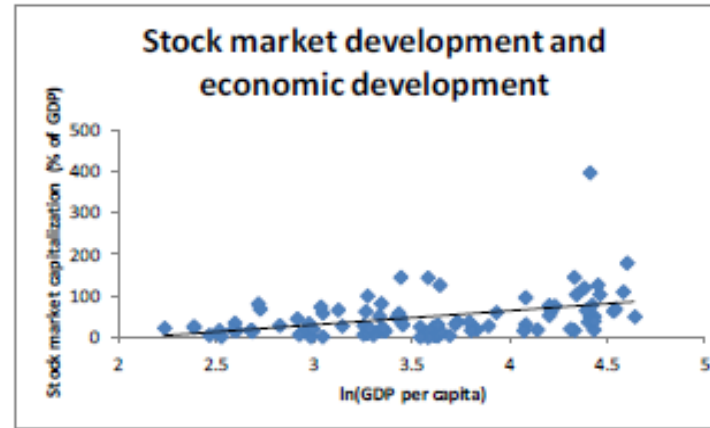


ASEAN+3 = Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea; GDP = gross domestic product.

Data as of end-2017.

Sources: Bank for International Settlements, AsianBondsOnline, CEIC, World Bank

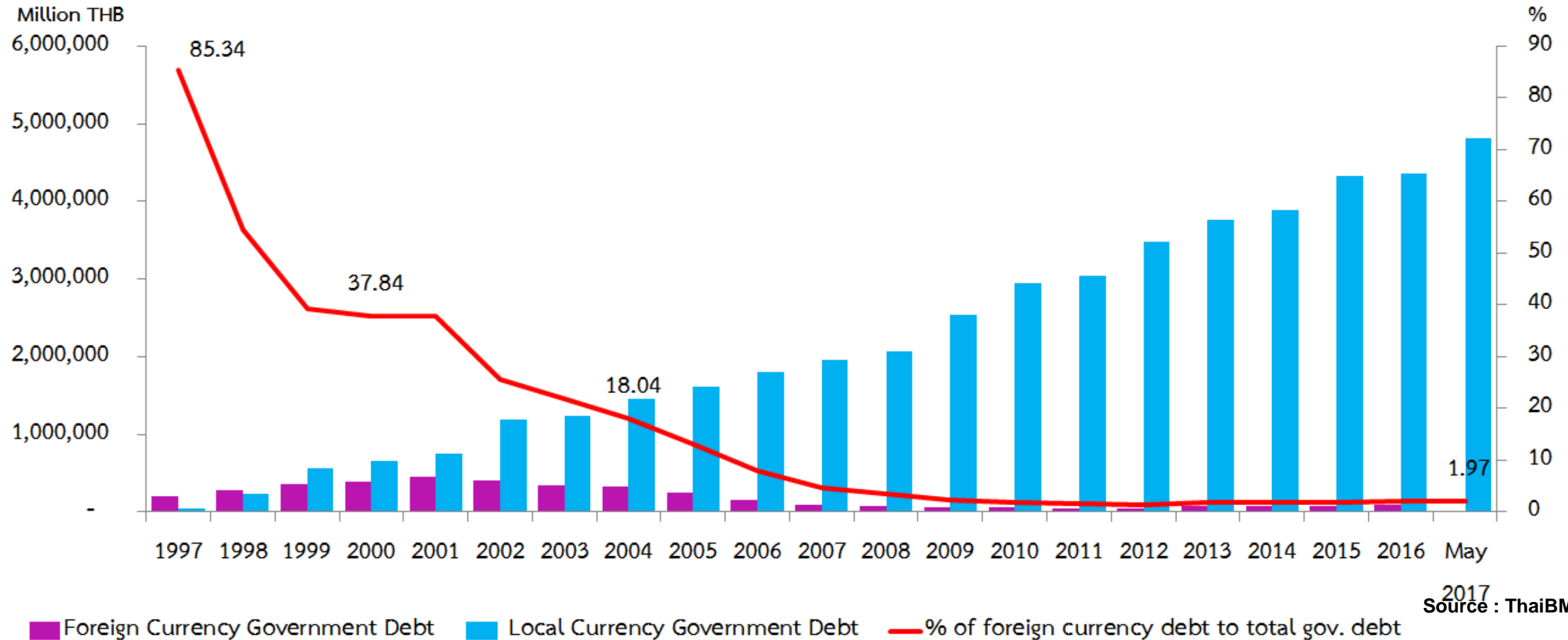
WHY LOCAL CURRENCY CAPITAL MARKET IS IMPORTANT?



Source : IMF Working Paper - The Development of Local Capital Markets: Rationale and Challenges by Luc Laeven



WHY LOCAL CURRENCY CAPITAL MARKET IS IMPORTANT?

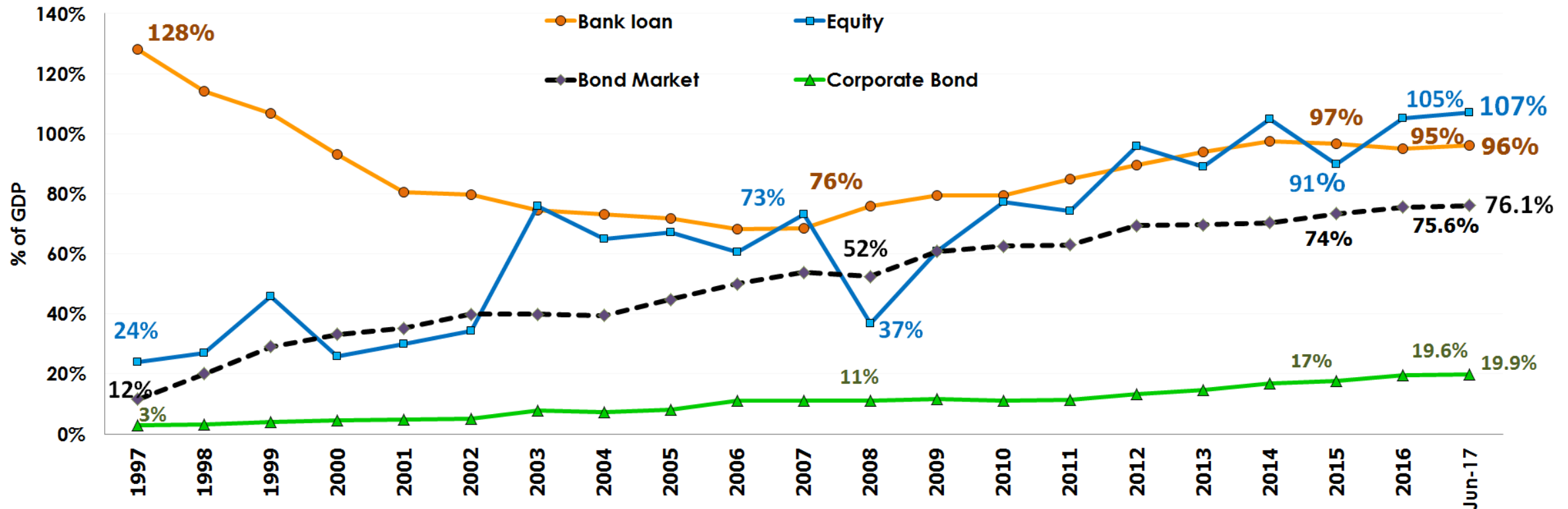


LCY bond market has helped the government (1) to reduce reliance on offshore funding and (2) to reduce foreign exchange risk.



WHY LOCAL CURRENCY CAPITAL MARKET IS IMPORTANT?

Outstanding of Thailand's Financial Market (% of GDP)

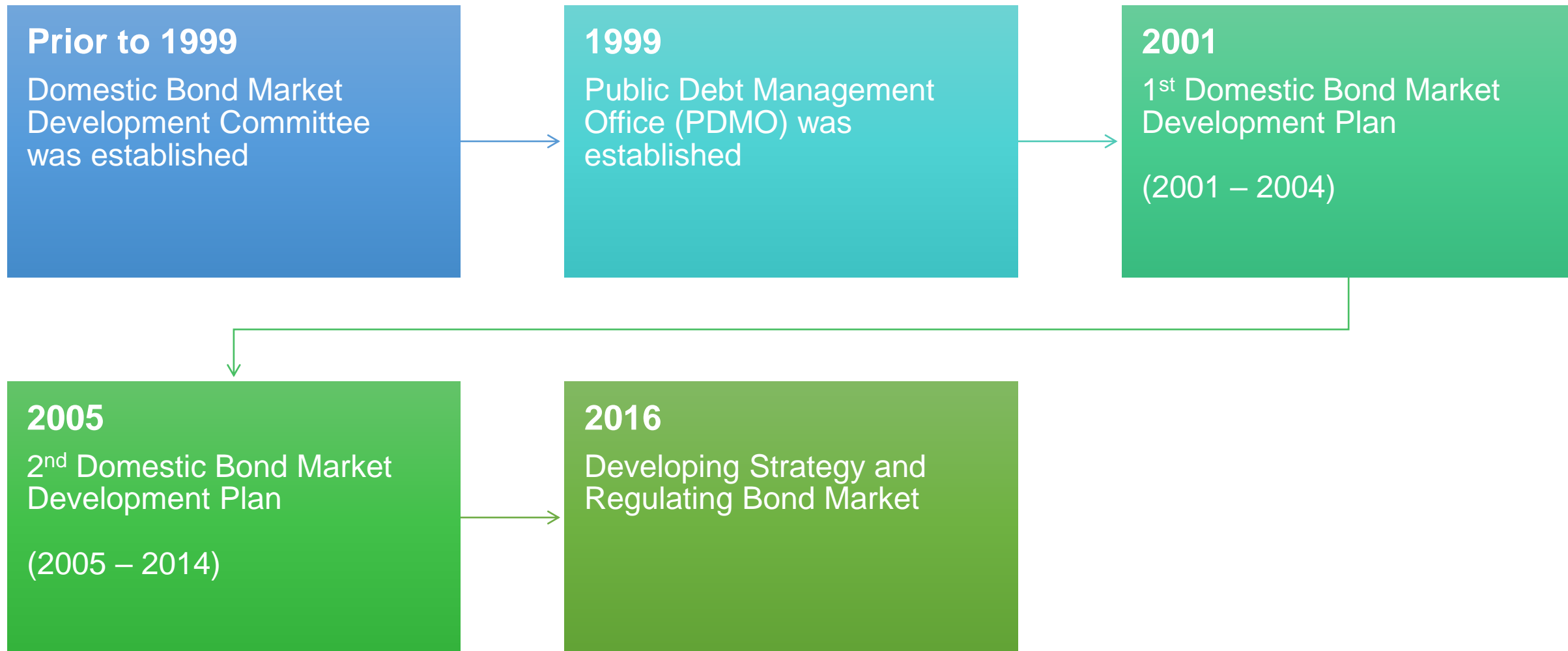


- After the 1997 crisis, Thai Bond Market has significantly grown from 12% of GDP to 76%
- This created more balance among 3 main financial pillars (bank loan, equity and bond market).
- Corporate bond has been continuously increasing, and unaffected by 2008 subprime crisis impacts.

Source : ThaiBMA



THAILAND - BOND MARKET DEVELOPMENT





THAILAND - BOND MARKET DEVELOPMENT

Domestic Bond Market Development Committee

➤ Task Force: solving problems in

- Primary Market
- Secondary Market
- Clearing and Settlement System
- Taxation on Debt Instrument Transaction
- Bond Market Information
- Market Convention and Code of Conduct
- Debt Management Office
- Private Repo Market

➤ Composition:

- MOF
- BOT
- SEC
- Thai BDC
- Commercial Banks

The establishment of Public Debt Management Office (1 Oct 1999)

Source : [Public Debt Management Office](#)

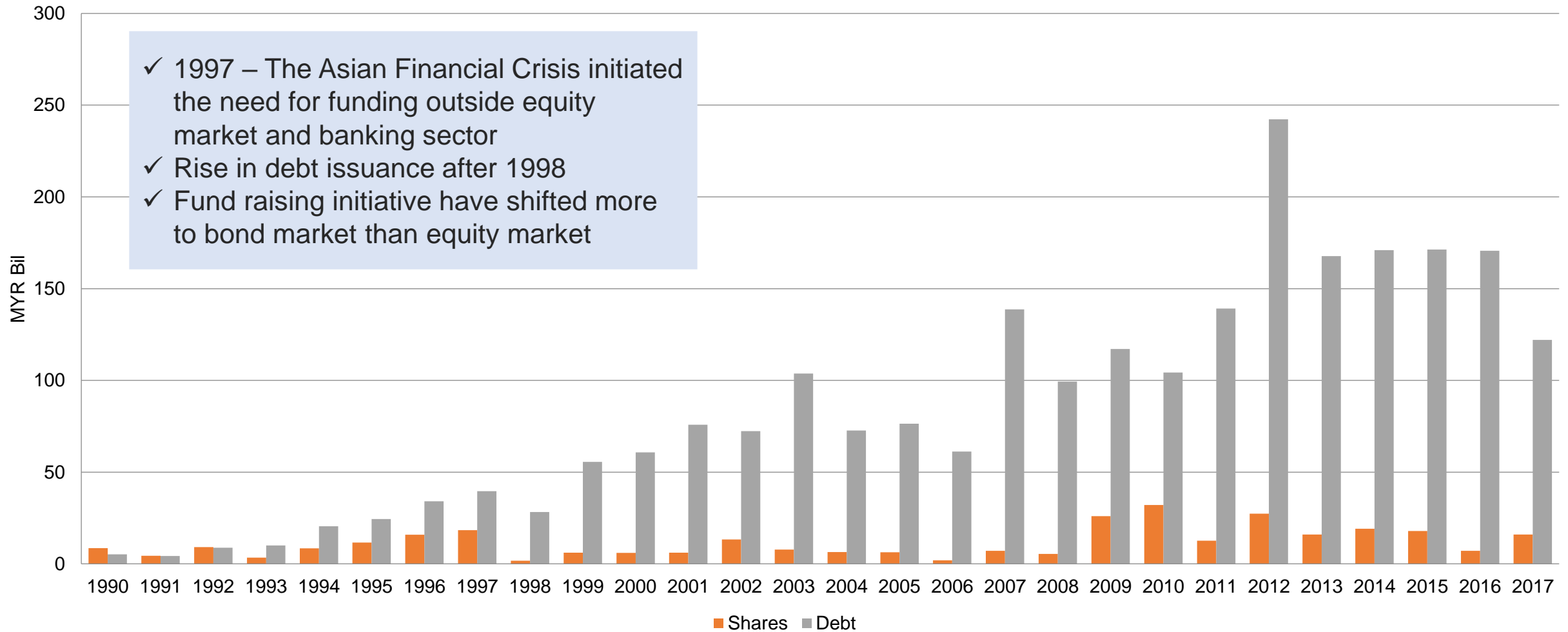


สำนักงานบริหารหนี้สาธารณะ
PUBLIC DEBT MANAGEMENT OFFICE

ADB



MALAYSIA - BOND MARKET DEVELOPMENT



Source : Bond Pricing Agency, Malaysia



MALAYSIA - BOND MARKET DEVELOPMENT

Capital Market Masterplan I [2001-2010]

17 recommendations for bond market development covering 5 key pillars:

- i. Benchmark yield curve & regular issuances;
- ii. Facilitative issuance process for corp. bonds;
- iii. Widening issuer & investor base;
- iv. Increasing liquidity;
- v. Risk management instruments

Capital Market Masterplan II [2011-2020]

Strategies to nurture new growth opportunities, fostering diversity & innovation:

- i. Widening access to bond market (e.g. widening credit spectrum, improving documentation & disclosure standards, expanding product range);
- ii. Promoting socially responsible financing & investment;
- iii. Expanding intermediation efficiency & scope

Source : Securities Commission, Malaysia



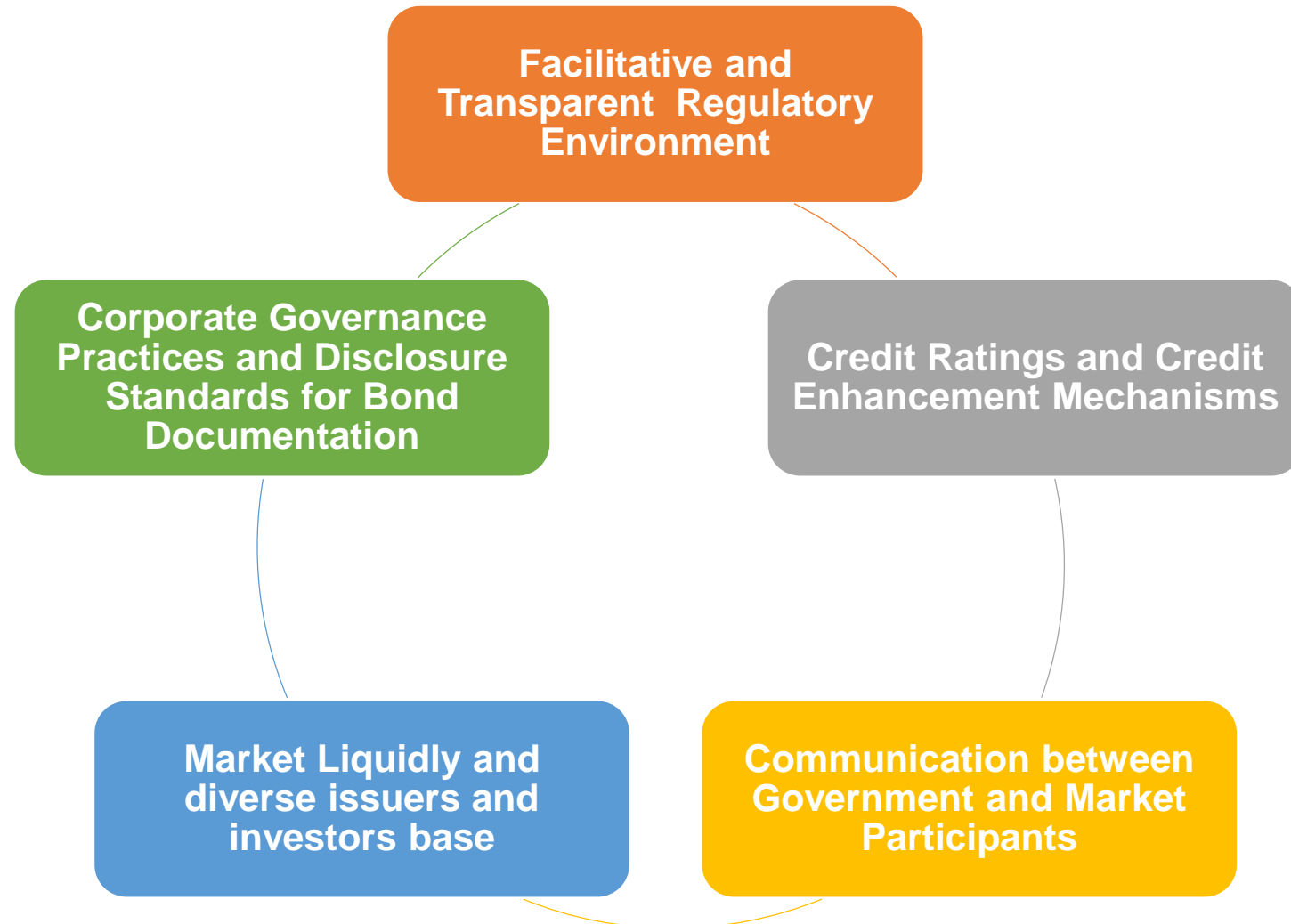
MALAYSIA - BOND MARKET DEVELOPMENT

	Prior to 2000	2000 –2015	2015 – present
Type of Submission	Merit based	Disclosure based	Lodgment based
Time frame for approval	1 to 3 months	Immediate approval for qualified issues 14 working days for other issues	Bonds may be issued following lodgment with the SC
Minimum credit rating requirement	BBB	No minimum rating requirement, but ratings remain mandatory	Credit rating requirements will no longer be mandatory from 1 January 2017
Disclosure requirements	Minimal disclosure requirements	Stringent due diligence for investor protection Posting of offering docs on the SC website	Stringent due diligence for investor protection Posting of offering documents on the SC website

Source : Securities Commission, Malaysia

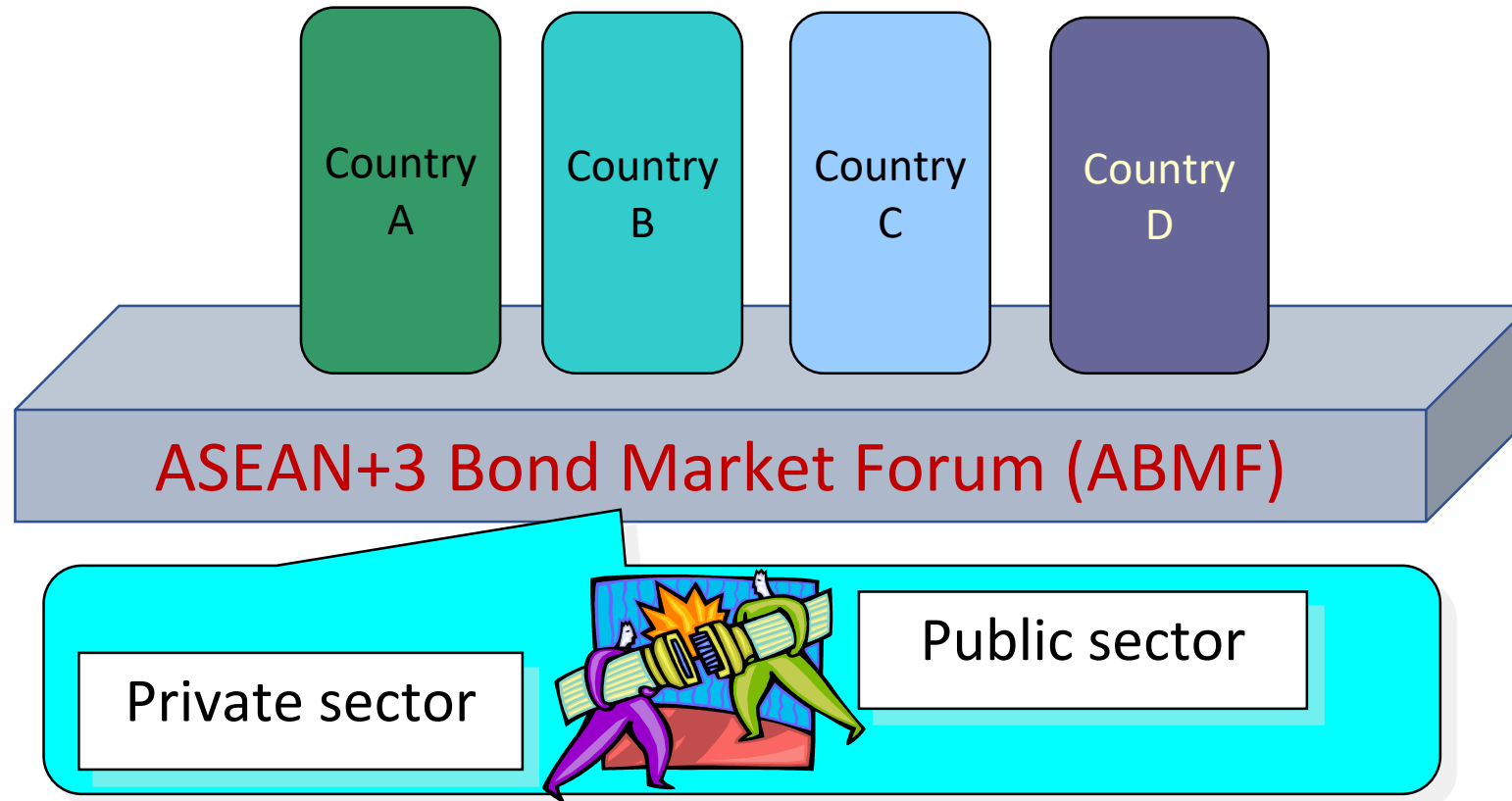


NECESSARY BUILDING BLOCKS TO DEVELOP A LOCAL CURRENCY BOND MARKET





ASEAN+3 BOND MARKET FORUM (ABMF) AS AN ENABLER FOR BOND MARKET DEVELOPMENT



- ABMF is the only regional platform to discuss various issues among private and public sector experts to share experiences and promote standardization
- ABMF successfully launched ASEAN+3 Multi-Currency Bond Issuance Framework (AMBIF).



ASEAN+3 MULTI-CURRENCY BOND ISSUANCE FRAMEWORK (AMBIF)

- The **Single Submission Form (SSF)** is aimed at facilitating an AMBIF bonds/notes issuance and an AMBIF Note Issuance Program application to regulatory, listing and registration authorities in each participating market.
- **SSF** is prepared for the benefit of issuers aiming to issue bonds/notes to Professional Investors in ASEAN+3

SSF CAN BE ADOPTED PURELY FOR DOMESTIC ISSUANCE TO PROFESSIONAL INVESTORS

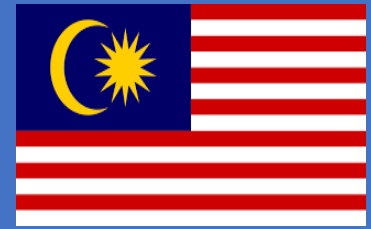
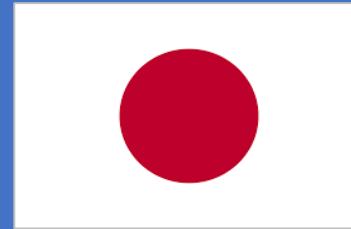
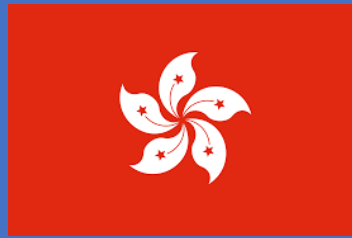


AMBIF ELEMENTS

AMBIF Elements	Thailand	Japan	Cambodia
1. Domestic Settlement	Thailand Securities Depository	Japan Securities Depository Center	Cambodia Securities Exchange
2. Harmonized Documents for Submission: SSF	Securities and Exchange Commission	Tokyo Stock Exchange (TSE)	Securities and Exchange Commission
2.1 Language of official document	English	English	Khmer
3. Registration or profile listing at ASEAN+3	Thai Bond Market Association	Tokyo Pro Bond Market	Cambodia Securities Exchange
4. Currency	Thai Baht	Yen	Riel
5. Scope of Issuers	Resident and Non-resident issuers	Resident and Non-resident issuers	Local issuers only
6. Scope of Investors	Institutional and HNW investors	Institutional and HNW investors	Institutional and HNW investors



AMBIF-PARTICIPATING MARKETS





THANK YOU

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AsianBondsOnline is a one-stop source of information on bond markets in emerging East Asia

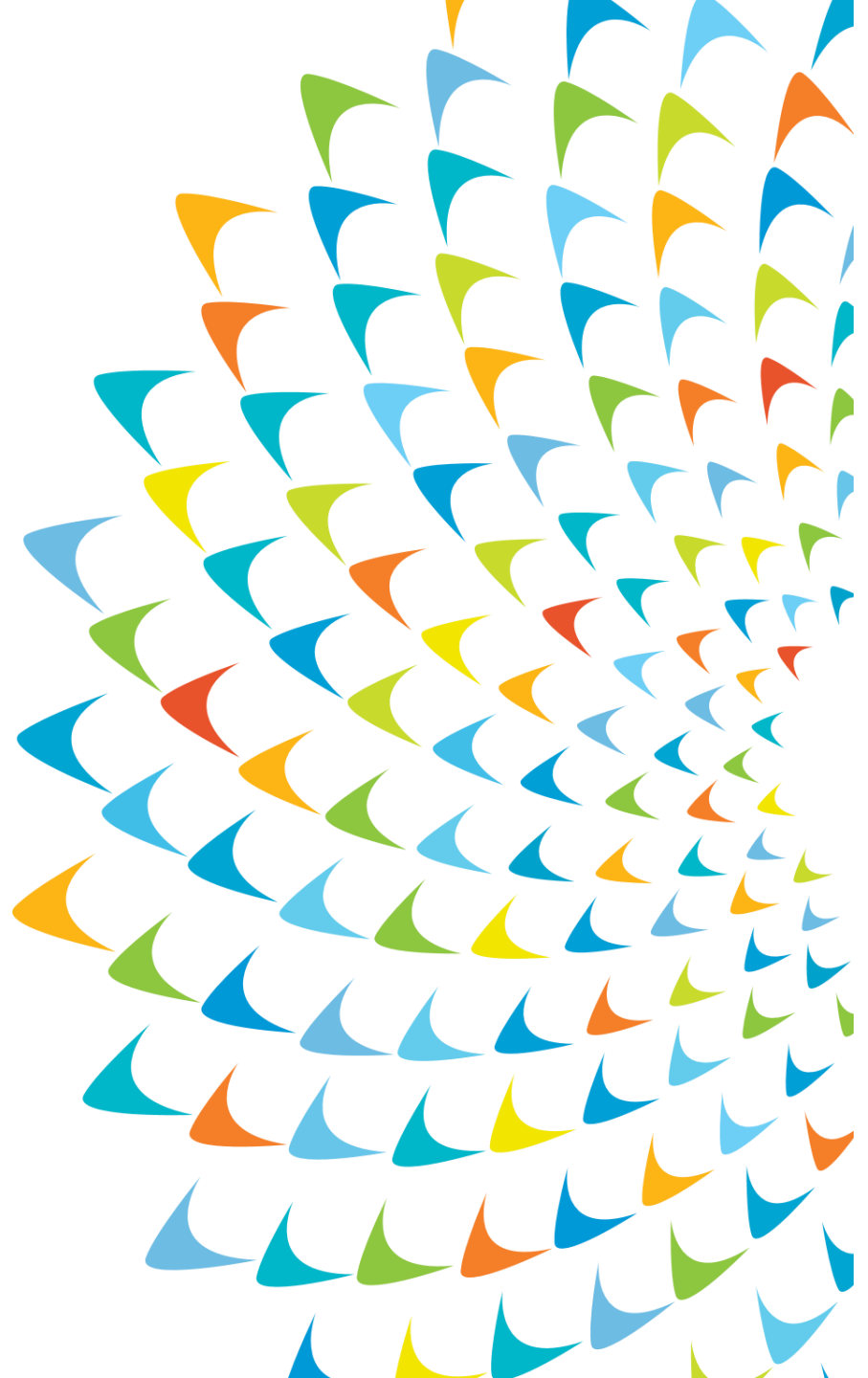
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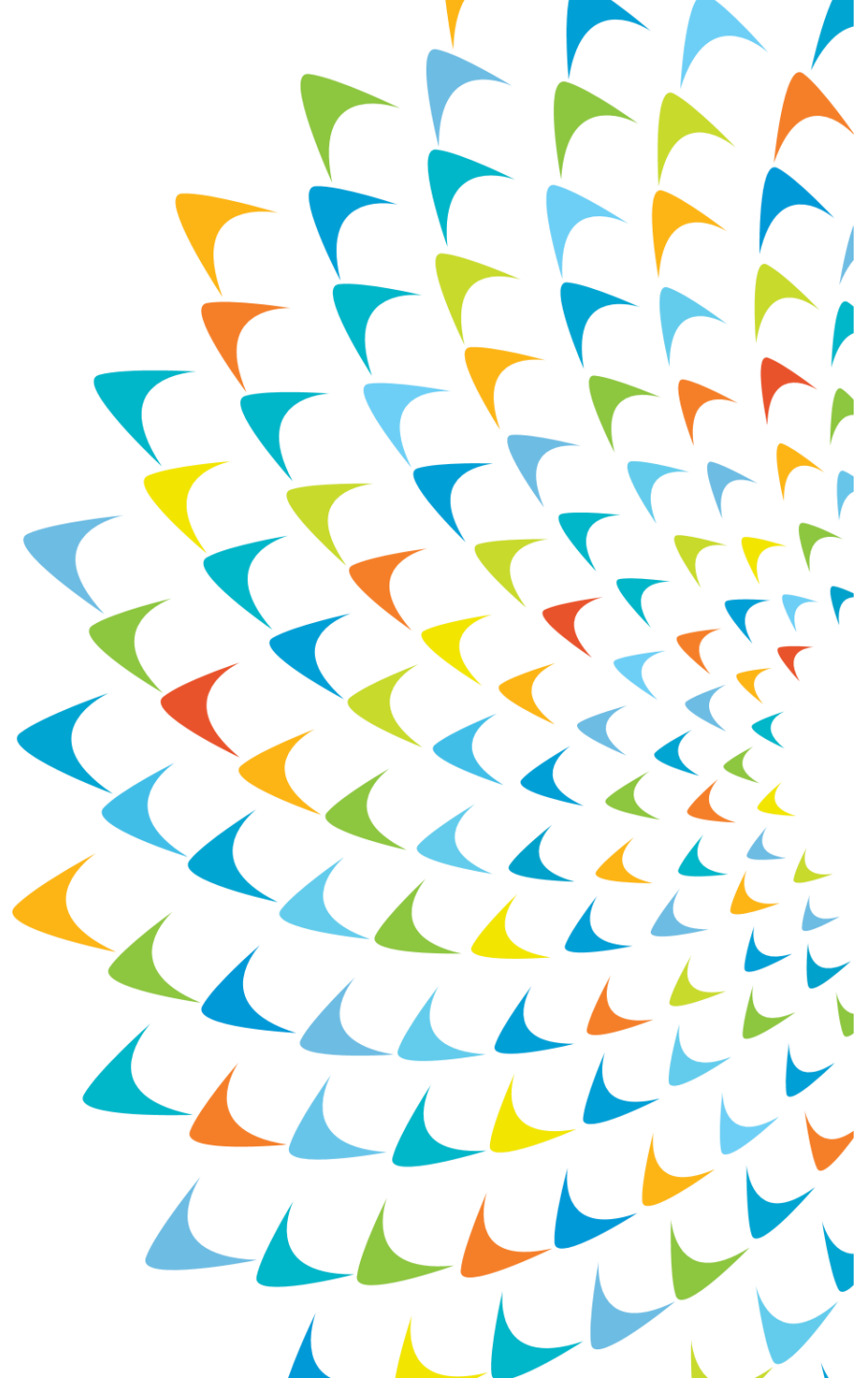


asianbondsonline.adb.org



Session 2: How to build a local currency bond market

Work shop on Local Currency Bond Market Development
29 March 2019 in Ulaanbaatar, Mongolia





OUTLINES

- Necessary Ecosystem
 - A. Robust Legal Framework
 - B. Accounting and Financial Reporting Standards
 - C. Credit Information and Credit Enhancement
 - D. Transparency in the Market
 - E. Efficiency and Safety in Trading and Settlement
 - F. Communication Between the Government and Market Participants
 - G. Market Liquidity
 - H. Taxation
 - I. Professional Investors Bond Market
- Sequencing the building blocks



Robust Legal Framework

- i. Market Integrity and Fairness
- ii. Company or Enterprise Law
- iii. Bankruptcy and Insolvency Law
- iv. Definition of Default
- v. Need of Clear Definition in Technical Terms



Accounting and Financial Reporting Standards

- i. International Financial Reporting Standards as Conduit to Comparable Disclosure Information
- ii. International Financial Reporting Standards Reflected in Domestic Accounting and Financial Reporting Standards
- iii. Acceptance of International Financial Reporting Standards by Listing Places
- iv. Corporate Disclosure and Governance (ASEAN Corporate Governance Scorecard)



Credit Information and Credit Enhancement

- i. Credit Assessment: What to Measure and How
- ii. Credit Enhancement: Objective and How




Transparency in the Market

- i. OTC and Price Information
- ii. Trading Rules and Market Practices
- iii. Information Services



Efficiency and Safety in Trading and Settlement

- i. Immobilization and Dematerialization
- ii. Delivery-Versus-Payment
- iii. The Benefits of Utilizing Information and Network Technologies Including International Standards
- iv. Harmonization and Standardization of Bond Market Infrastructures
- v. Current Situation in ASEAN+3
- vi. Future Perspective Utilizing Latest Technologies and Implementing Regional Initiatives



Communication Between the Government and Market Participants

- i. Primary Dealers
- ii. Self-Regulatory Organization
- iii. Industry Association



Market Liquidity

- i. Measurements of Market Liquidity and their Limitations
- ii. Policy Measures to Support Liquidity
- iii. Interaction Between the Primary and Secondary Markets
- iv. Repurchase Agreements and Securities Lending and Borrowing Functions
- v. Note Issuance Program and Reverse Enquiry Opportunity to Facilitate Issuance



Taxation

- i. Key Aspects of Taxation in Relation to the Bond Market
- ii. Tax Incentives and Exemptions
- iii. Tax Processing



Professional Investors Bond Market

- i. Professional Markets (Exempt) Regimes
- ii. Disclosure in Public and Professional Markets
- iii. Ringfencing Requirement in a Professional Market
- iv. Benefits of a Professional Investors Bond Market



Sequencing, Mapping, and Institutional Arrangements of Building Blocks

- i. Coordination Among Policy Making Authorities
- ii. Bond Market Development Master Plan and Roadmap
- iii. Some Key Takeaways from ASEAN+3



THANK YOU

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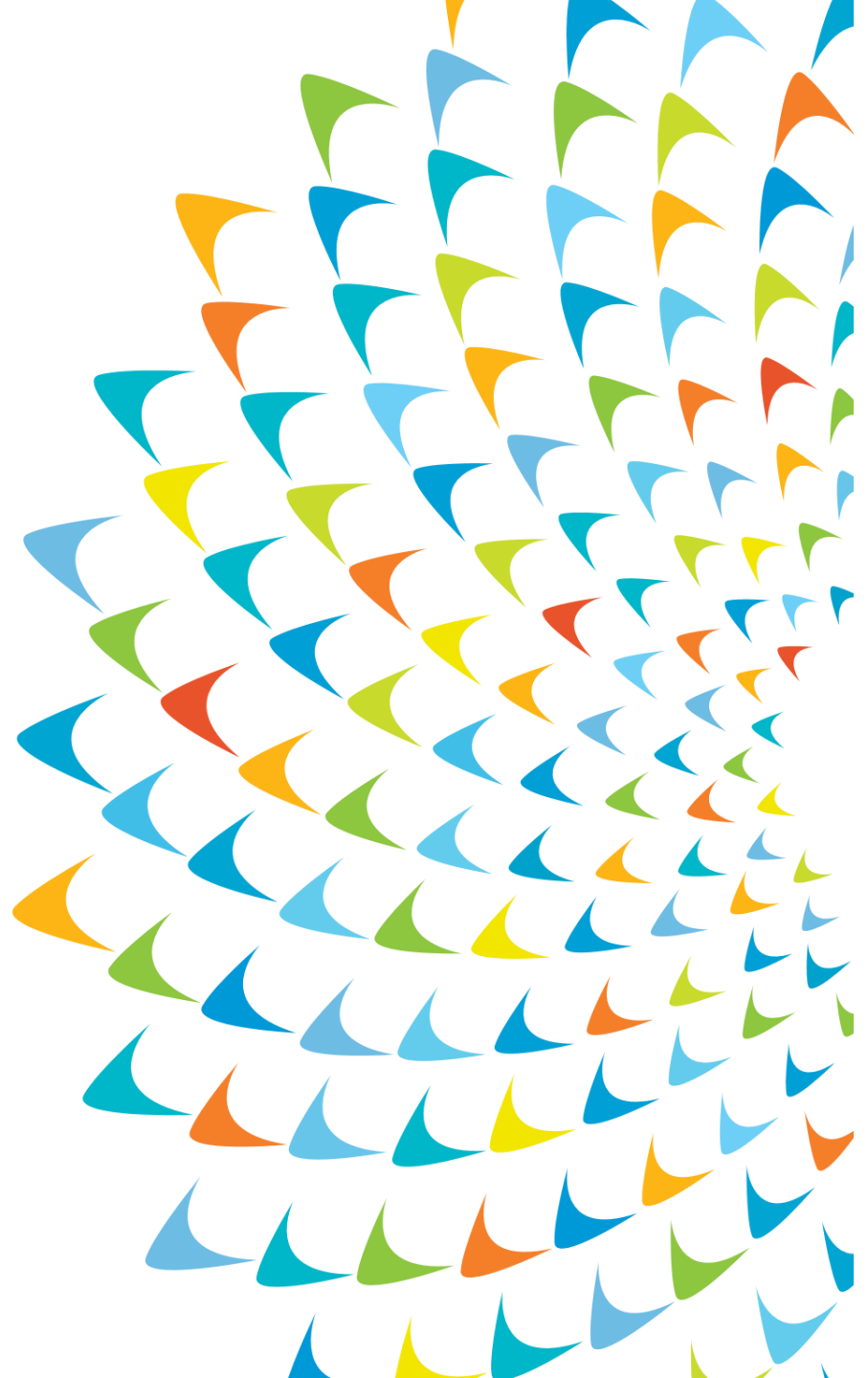
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XBRL, its real power and Japanese experience

March 2019
Yoshiaki Wada
Chair for XBRL Asia Round Table
Member of Board of Directors, XBRL International
NTT DATA

Today's Topics

- What is XBRL?
- Issues in Regulatory Reporting process
- Why XBRL for Regulatory Process?
- Experiences in the Bank of Japan
- XBRL for Non-Financial Reporting
- XBRL for Regulatory Process Automation

About Myself

- **1982~2010:**

Worked for the Bank of Japan

- Economic Research Department
- IT Department
- Bank Supervision Department
- XBRL Project Leader

- **2010~**

Working for NTT Data Corporation as an IT Specialist

- Building Regulatory Reporting System especially based on XBRL
- Development of No-SQL DWH
- Participating in Japanese Government's ESG reporting project
- Member of the Board of Directors of XBRL International, Chair for XBRL Asia Round Table

What is XBRL?

Question

How many people have ever heard the word,
"XML"?

How many people have ever heard the word,
"IFRS"?

How many people have ever heard the word,
"CDP" or "GRI"?



XBRL is closely related to these words, and plays a key role to
enhance the efficiency of Data Supply Chain in the Society

What is XBRL?

- XBRL (eXtensible Business Reporting Language) is a computer language based on XML, specially designed for business reporting of structured data

Able to describe data independent from system platform



Able to exchange data between different systems without manual process

- Originally XBRL was developed for financial data, and has been widely implemented as a de-fact standard for data exchange in the world

Japan took the first initiative of implementation

Covering not only financial data but also non-financial data

Expanding use cases from public sector to private sector

A key-technology for Open-Data

What is XBRL? (Historical Background)

Created by Mr. Charles Hoffman, a CPA in the U.S. in 1998 and then developed with the strong support from AICPA.



Source: Journal of Accountancy


There is a NGO called XBRL-International, which is presently responsible for development and promotion of XBRL.

XBRL-International, was established in 1999.

What is XBRL? (Technical Structure 1)

Popular data format

CSV(Comma Separated Value)

CRLF=command
for new line 

Field1,Field2,Field3,Field4 CRLF

File style

File rule

1st Data in row

3rd Data in row

2nd Data in row

4th Data in row

Country, Capital, Population, Land area CRLF

Mongolia, Ulaanbaatar, 3076000, 1566500 CRLF

Japan, Tokyo, 126670000, 377973 CRLF

Actual CSV file

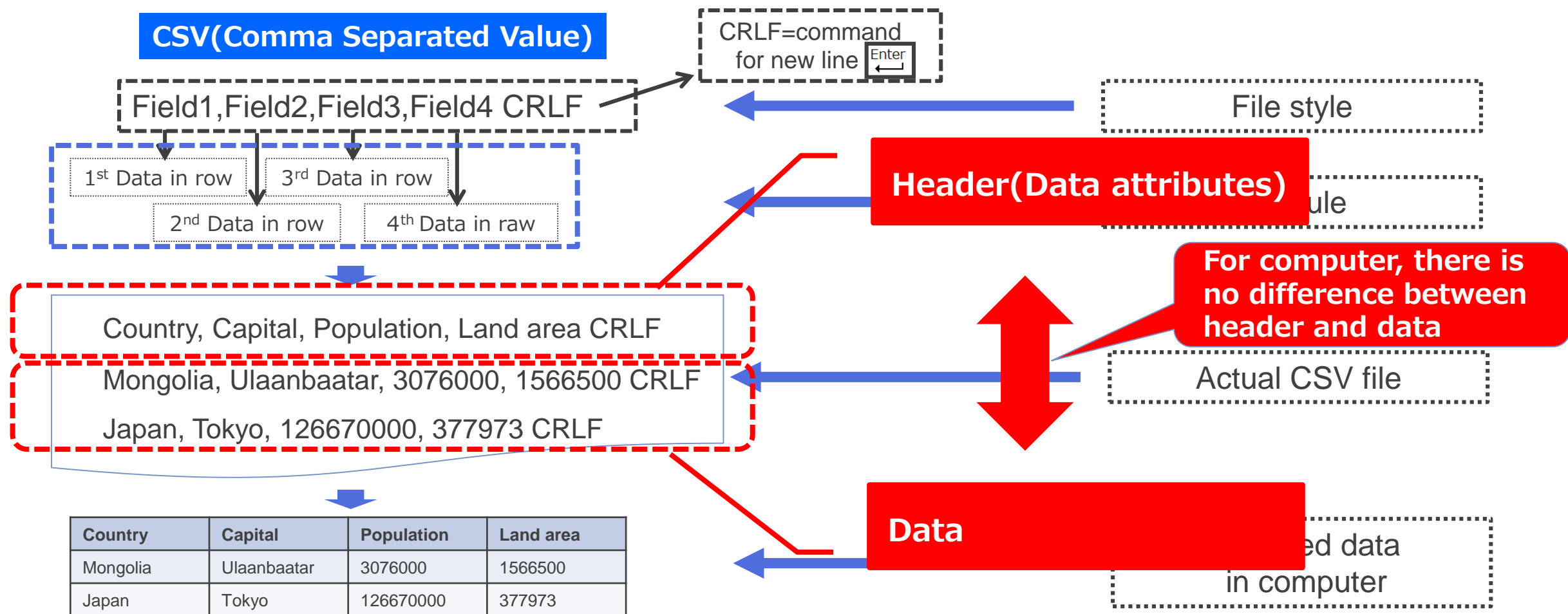
Received data
in computer

Country	Capital	Population	Land area
Mongolia	Ulaanbaatar	3076000	1566500
Japan	Tokyo	126670000	377973

What is XBRL? (Technical Structure 1)

Popular data format

CSV(Comma Separated Value)



What is XBRL? (Technical Structure 1)

When sudden changes happen in header information, computer is not able to understand the difference between old header and new header

i.e. Country, Capital, Population, Land area,



Country, Company, Capital amount, workers

Therefore, header information=format rule must be informed to receiving side in advance

What is XBRL? (Technical Structure 2)

Popular data format

EXCEL

Country	Capital	Population	Land area
Mongolia	Ulaanbaatar	3076000	1566500
Japan	Tokyo	126670000	377973

Country	Company	Capital amount	Workers
Mongolia	AAAAA	1234	5000
Japan	BBBBBB	5678	3000

Difference of the meaning of header is only understandable for human

What is XBRL? (Technical Structure 2)

Popular data format

EXCEL

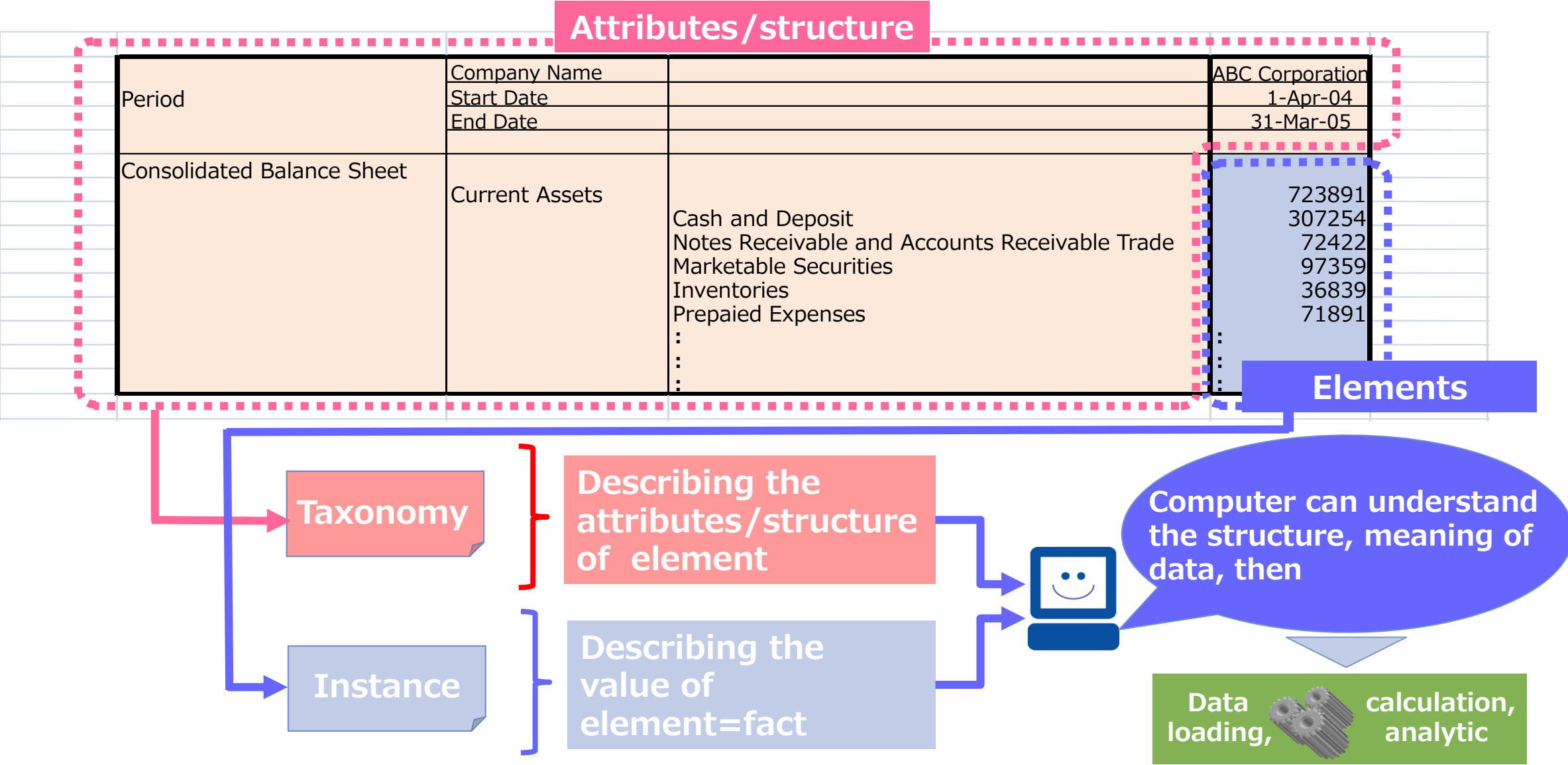
Country	Capital	Population	Land area
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Country	Company	Capital amount	Workers
Mongolia	AAAAA	1234	5000
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Difference of the meaning of header is only understandable for human

Therefore, header information=format rule must be informed to receiving side in advance

Feature of XBRL (eXtensible Business Reporting Language)



Feature of XBRL (eXtensible Business Reporting Language)

Attributes/structure

XBRL is the only one technology that conveys data value and attributes/structure information in the separate files.

It needs a little bit complicated data generation and reading process, but makes following unique features possible.

That is, Machine-readable and Machine-understandable data format

It can tell the computer the data and its definition at the same time

element=fact

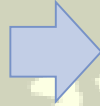
loading,

analytic

Major use cases of XBRL

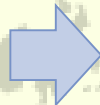
XBRL is already used as an de-facto standard for reporting in various cases, all over the world including all G20 countries.

Regulatory Reporting



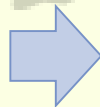
Central Banks, Financial/Security/Market regulators

Financial/Non-Financial Disclosure



Business Report (e.g., IFRS other GAAP based), ESG Reporting

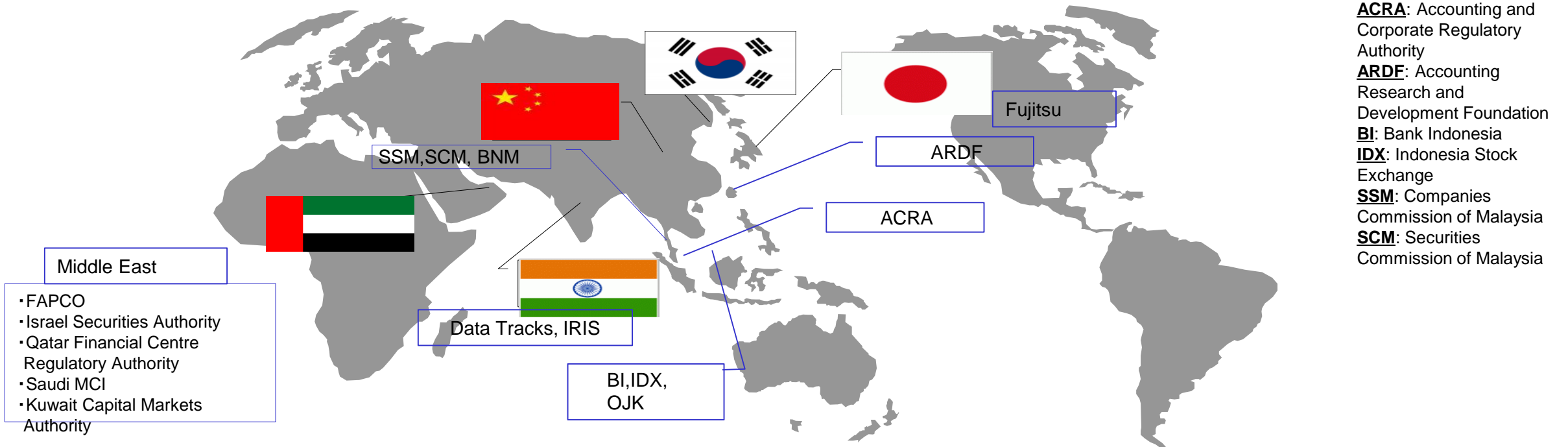
Governmental Filings



Tax-filing, Pension filings, etc.






XBRL members in Asia and Middle East

5 Jurisdictions and 14 Direct Members

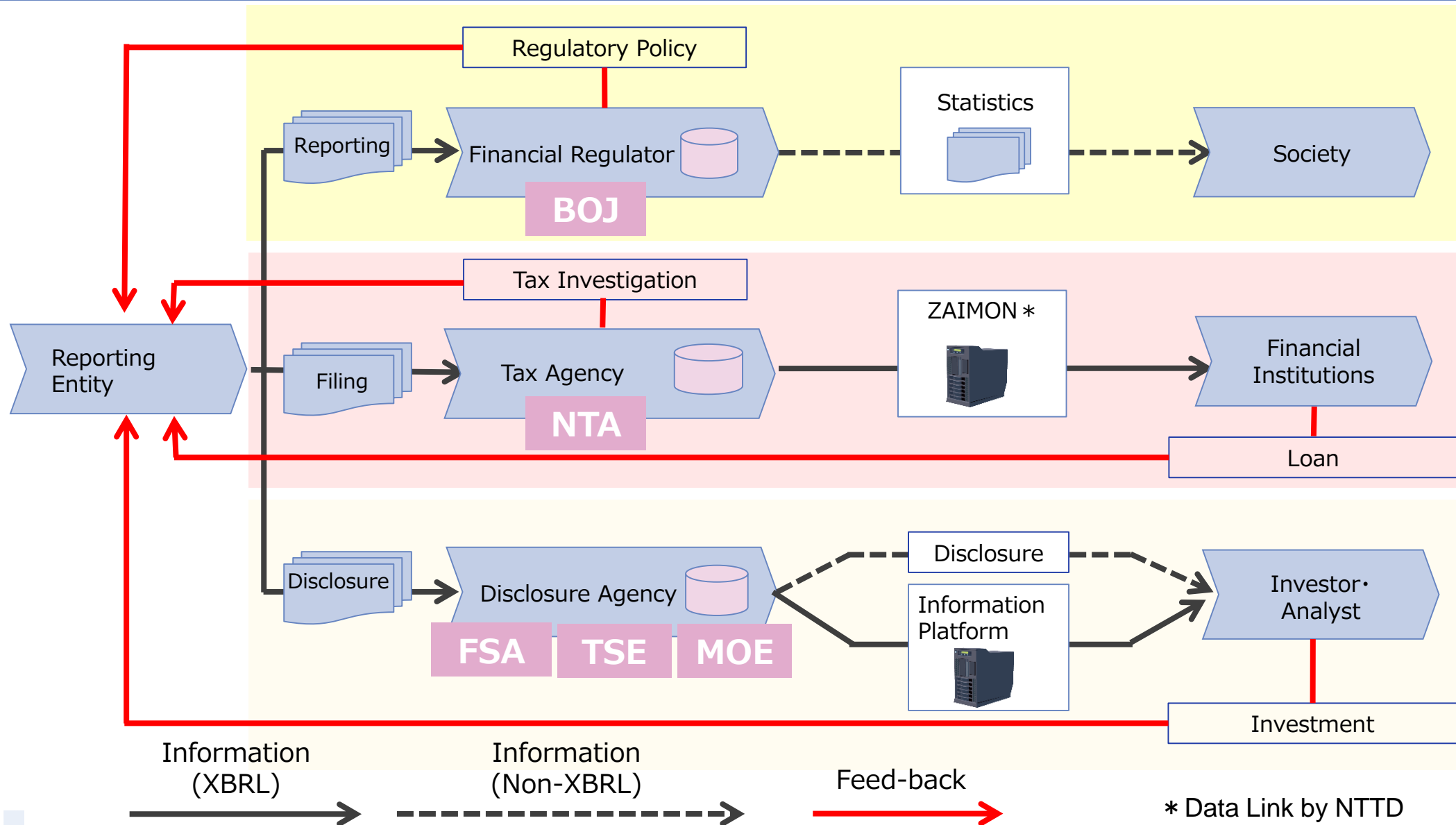


In addition to above, other ASEAN countries including Thailand, Philippine, Cambodia, Lao P. D. R are also studying/planning to implement XBRL.

Major use case of XBRL in japan

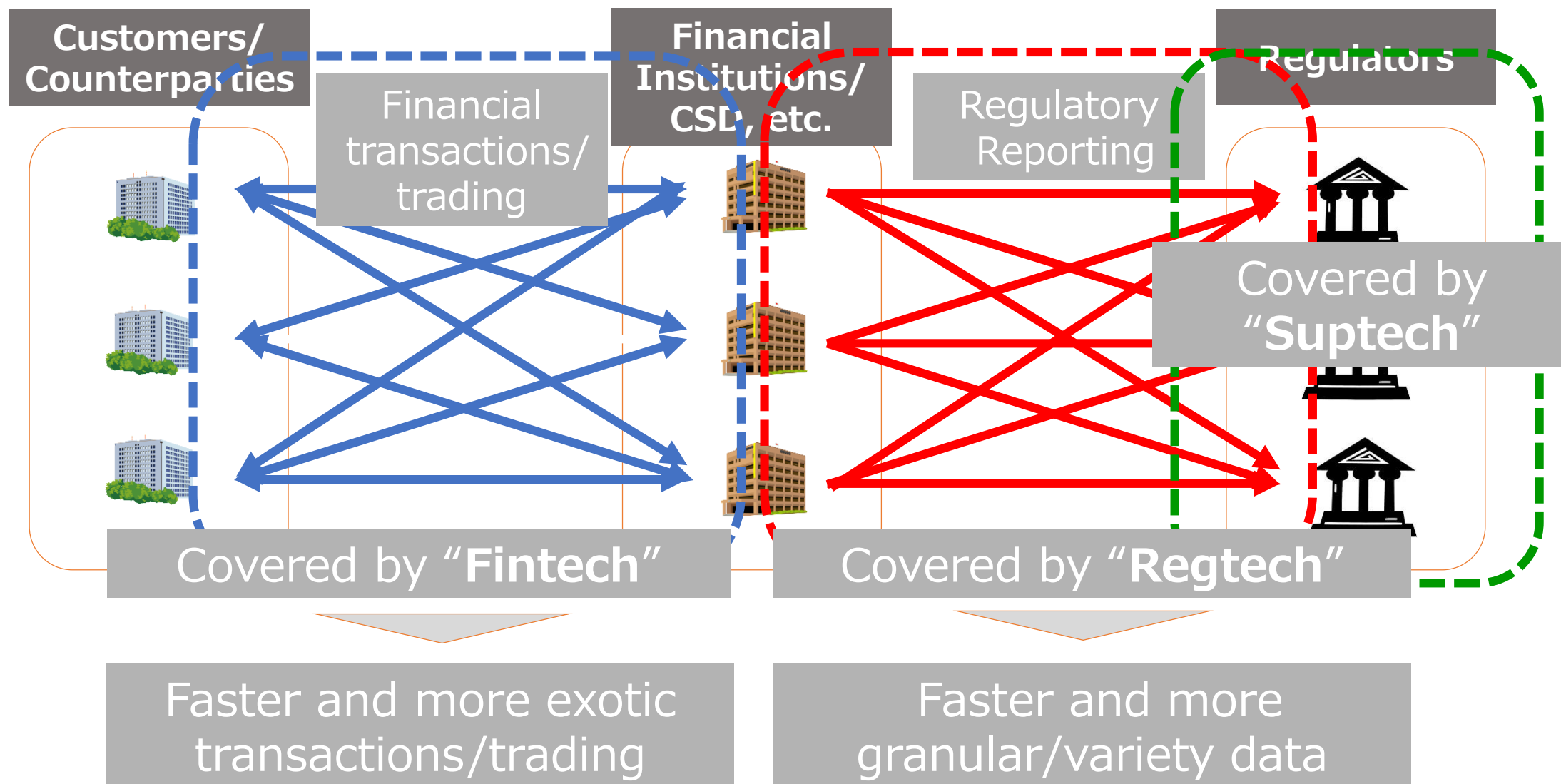
<p>National Tax Agency of Japan</p> 	<p>Bank of Japan</p> 	<p>Tokyo Stock Exchange</p> 	<p>Financial Service Agency of Japan</p> 	<p>Ministry of Environment of Japan</p> 
<p>e-Tax</p> <p>Live Use</p>	<p>BOJ-Info</p> <p>Live Use</p>	<p>TD-Net, Corporate Report</p> <p>Live Use</p>	<p>EDINET</p> <p>Live Use</p>	<p>Environment Report</p> <p>POC</p>

Information Supply Chain with XBRL in Japan

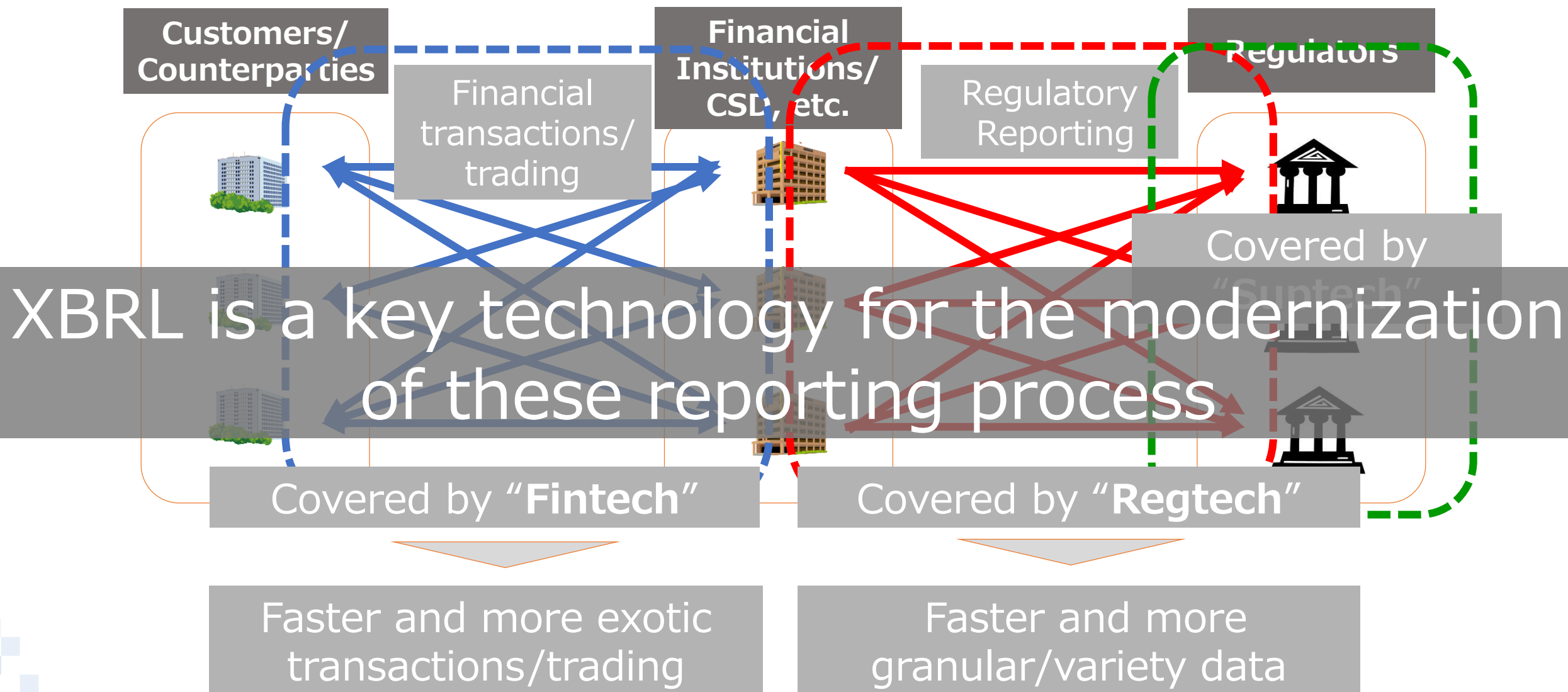


Issues in Regulatory Reporting Process

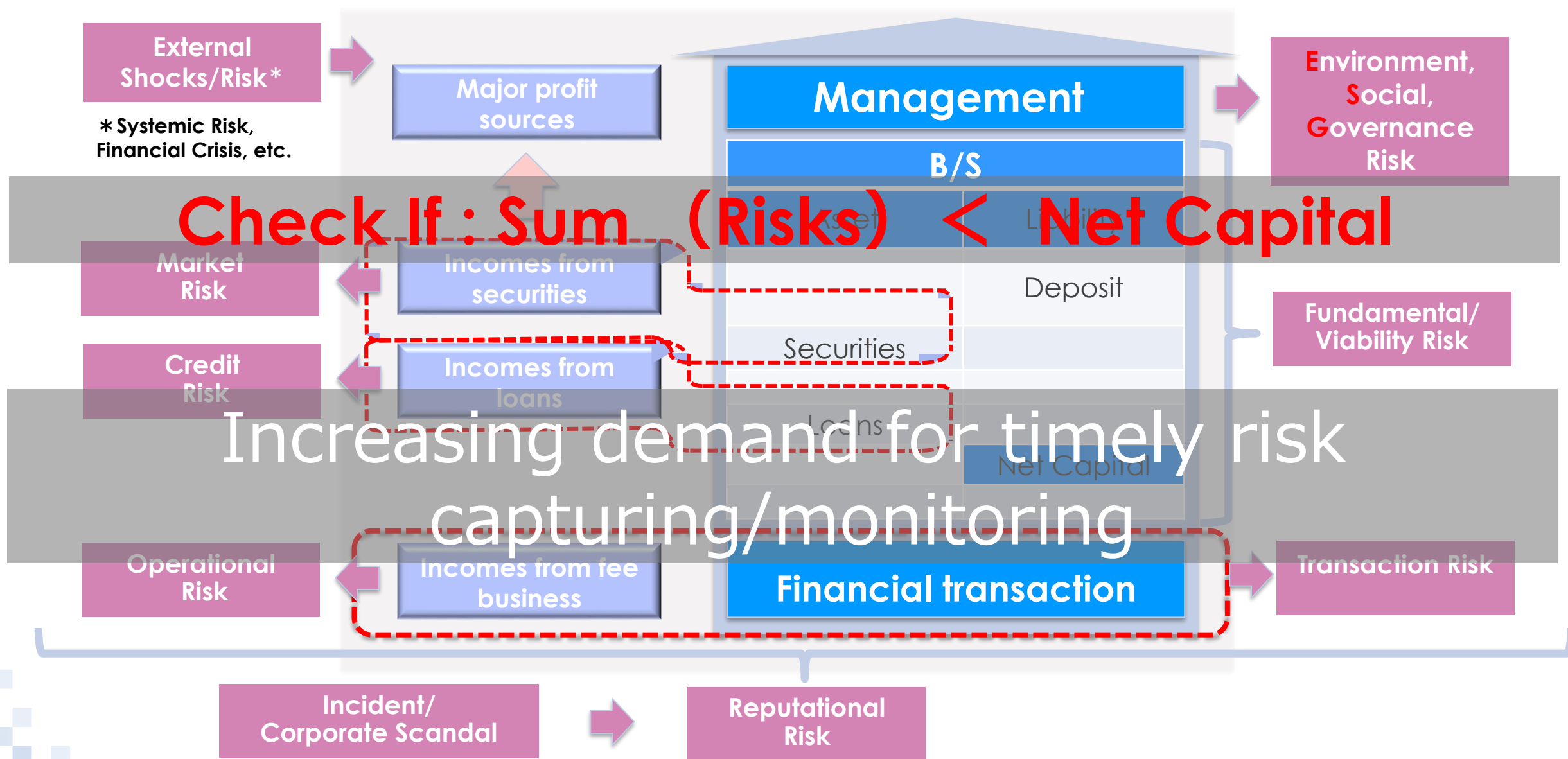
Recent trend in financial transaction and regulatory missions



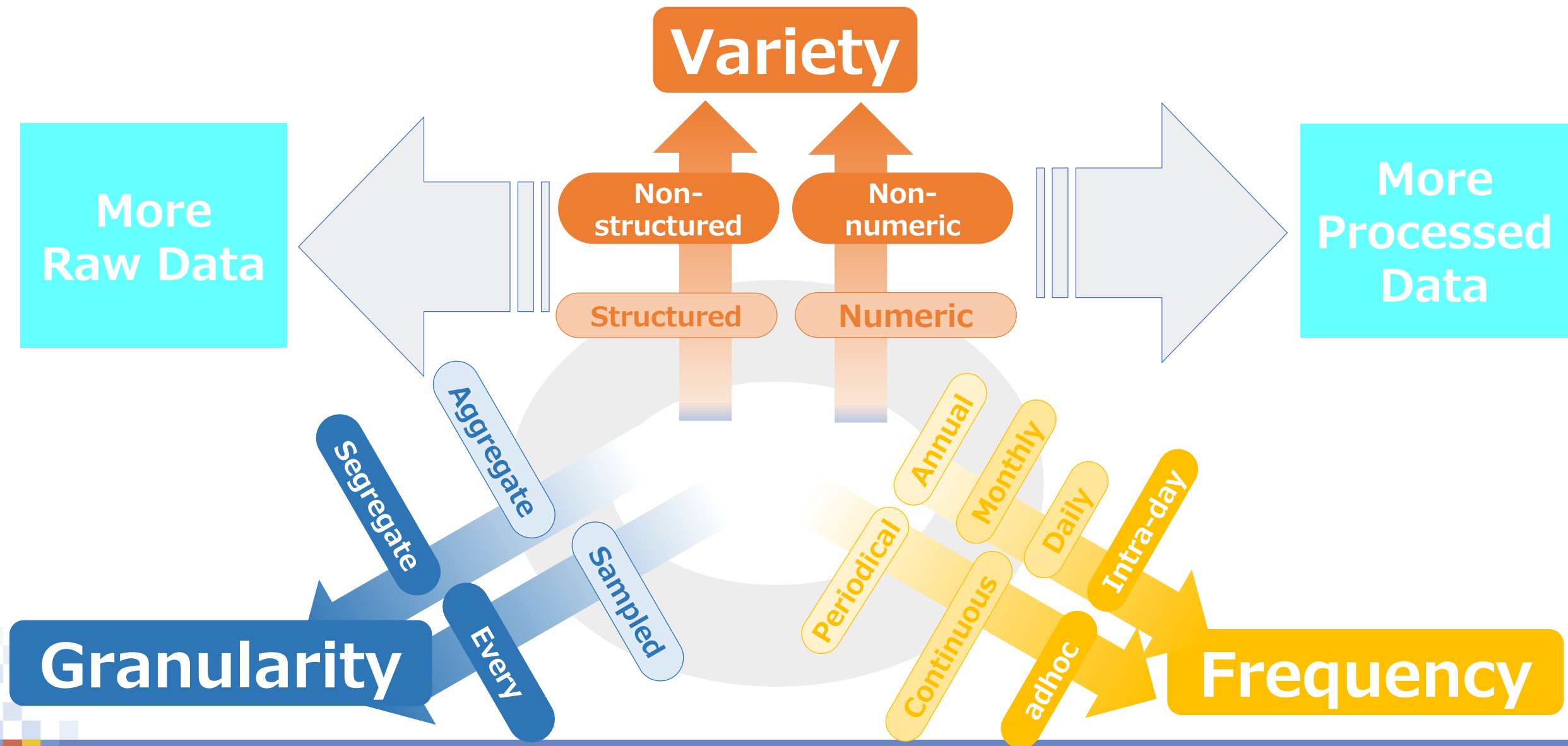
Recent trend in financial transaction and regulatory missions



Major Risks around Financial Institutions



Expanding Regulatory/Audit/In-house monitoring Data Scope



Data Format for monitoring

Monitoring Period	Nature of Data	Popular Data Format
Real Time	Simple, high speed, i.e. event-log	CSV, TEXT
Daily	Slightly complicated, i.e. Transaction messaging	CSV, TEXT, XML
Periodical	Complicated, low speed, i.e. reporting	XML, XBRL
On-demand	Flexible structure, i.e. reporting	HTML, PDF, XML, XBRL, Excel

Data Format for monitoring

Monitoring Period	Nature of Data	Popular Data Format
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For high speed & simple data, CSV, TEXT is suitable

Daily	<i>i.e. event-log</i> Slightly complicated, <i>i.e. Transaction messaging</i>	CSV, TEXT, XML
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For messaging, complicated structured report, XML and XBRL is suitable

On-demand	Flexible structure, <i>i.e. reporting</i>	HTML, PDF, XML, XBRL, Excel
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Why XBRL for Regulatory Process?

Special cases which is not realized without XBRL

Popular data format, such as CSV, Excel can be used for most cases of data supply chain

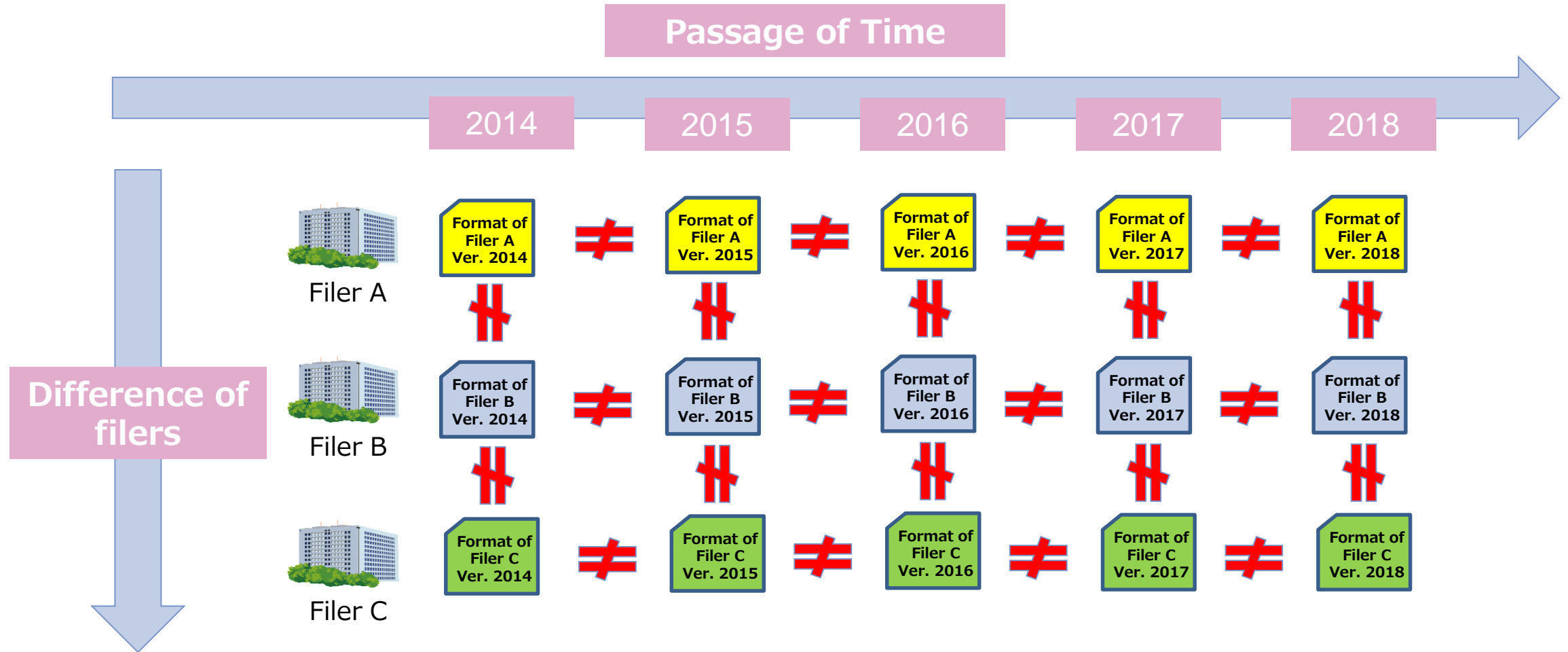
However,

There are some cases which are not realized by the format other than XBRL, such as.....

Case1: Changing/differing data structure

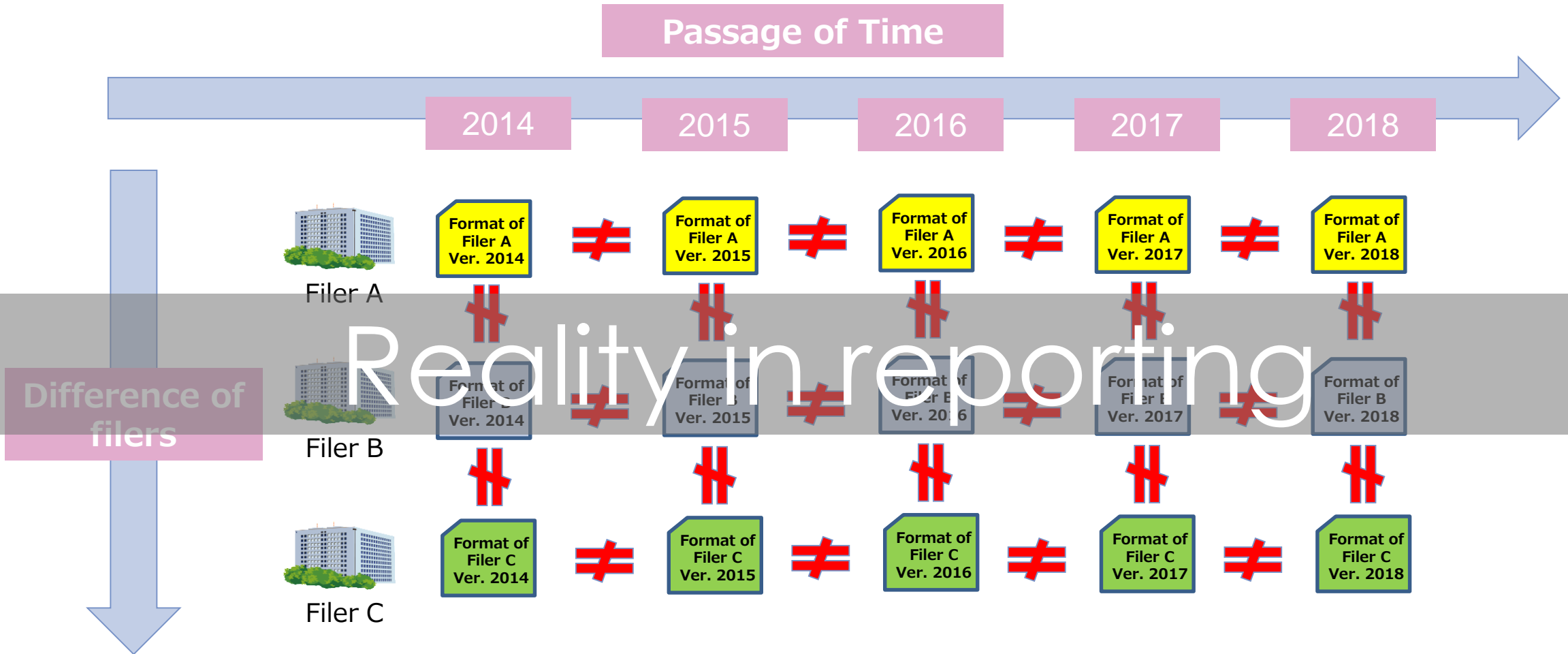
Case2: Highly dimensional data

Case1: Changing/differing data structure (1)



Increasing format variety, difficulty to handle these data

Case1: Changing/differing data structure (1)

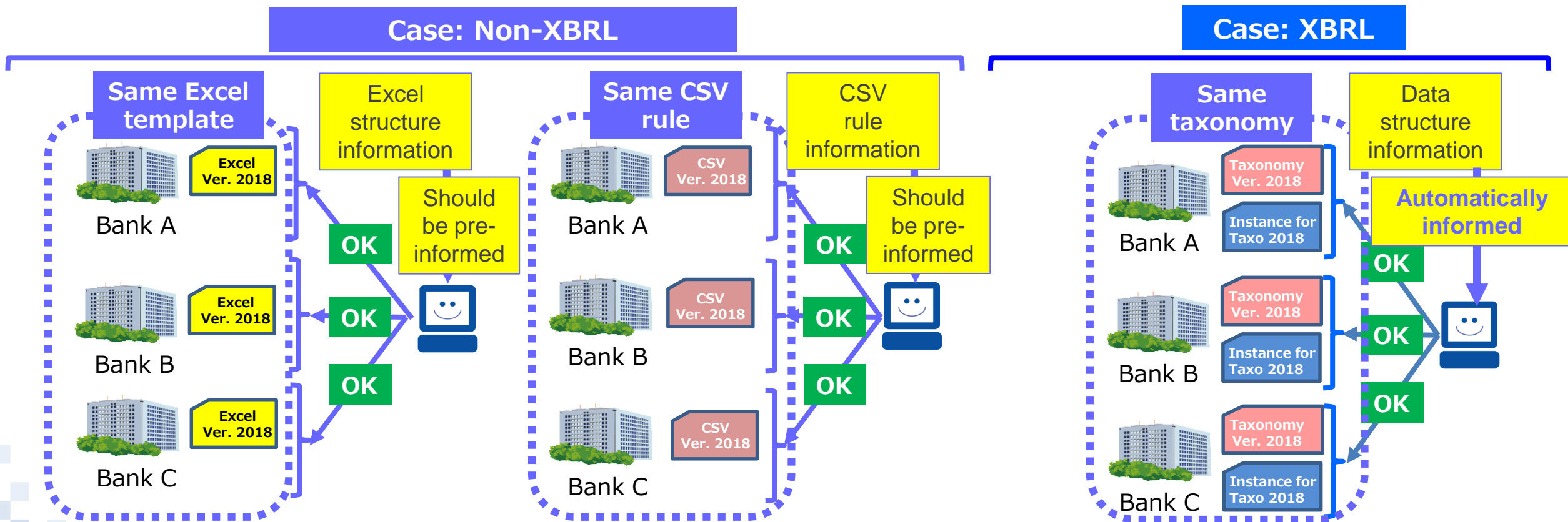


Increasing format variety, difficulty to handle these data

Case1: Changing/differing data structure (2)

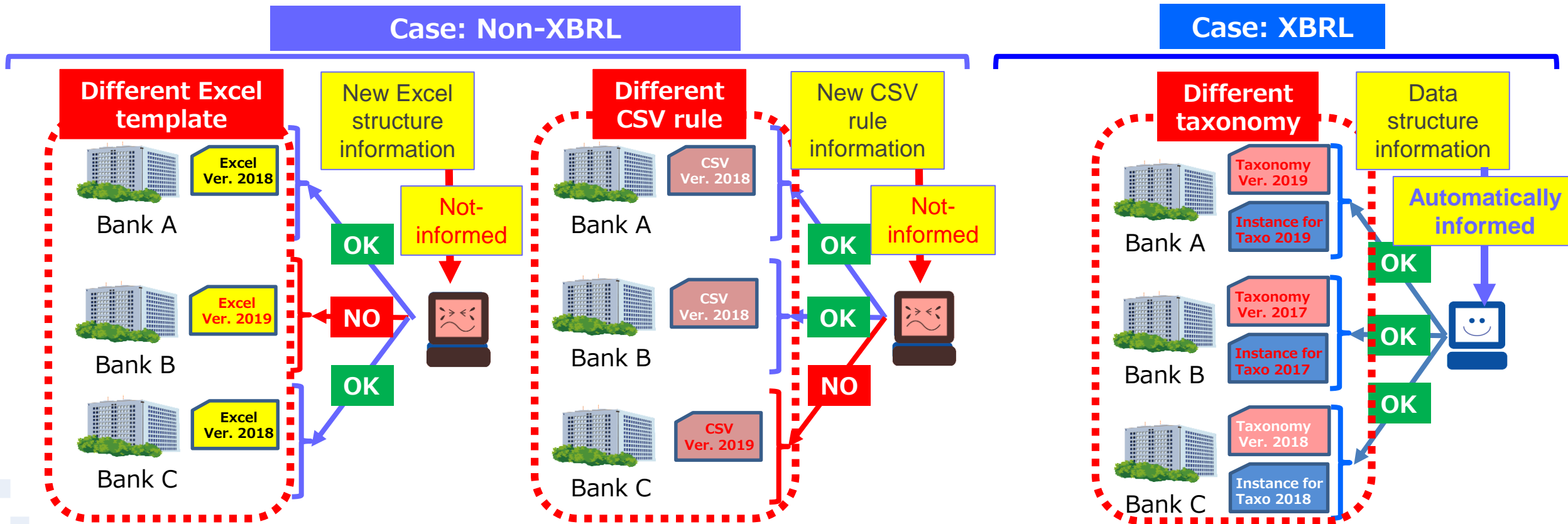
For the smooth data exchange, reporting/messaging form, template and rule should be standardized and stable.

Then most data format can work efficiently.



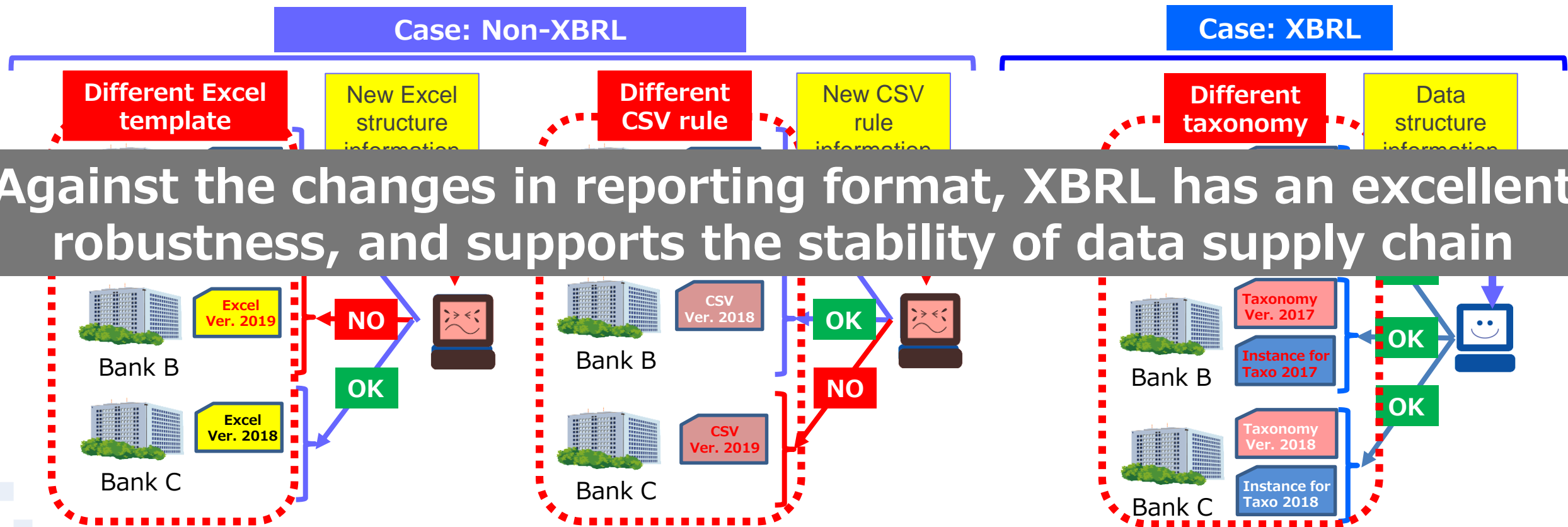
Case1: Changing/differing data structure (3)

If any filer uses different reporting/messaging form or rule, and that is not informed to receiver, what will happen?



Case1: Changing/differing data structure (3)

If any filer uses different reporting/messaging form or rule, and that is not informed to receiver, what will happen?



Case2: Highly dimensional data (1)

ABC Bank : FY2016

ABC Bank : FY2017

PQR Bank : FY2016

PQR Bank : FY2017

Recent regulatory data trend ⇒ More granular, more dimensional

How to cope with these data by conventional Relational Data Base?

Base	Main category	Approach	Portfolio	Main Metric	Value
Exposures	Financial instruments subject to market risk	Standardized Internal models	Trading and trading	Total risk exposure amount	7,873,000
				Adjusted stressed VaR	3,706,000
				Adjusted VaR	6,498,000
				All price risk capital charge for CTP Floor	5,060,000
				All price risk charge for CTP 12 weeks ave	6,246,000
				All price risk charge for CTP last measure	7,915,000
				Average incremental default and migration risk capital charge	1,007,000
				Incremental default and migration risk capital charge last measure	6,622,000
				Latest available stressed VaR	6,093,000
				Own funds requirements	5,279,000
				Previous day VaR	3,597,000
				SVaR Multiplication factor	2,486,000
				Total risk exposure amount	65
				VaR Multiplication factor	2,294,000
					97

Step1: Standardize

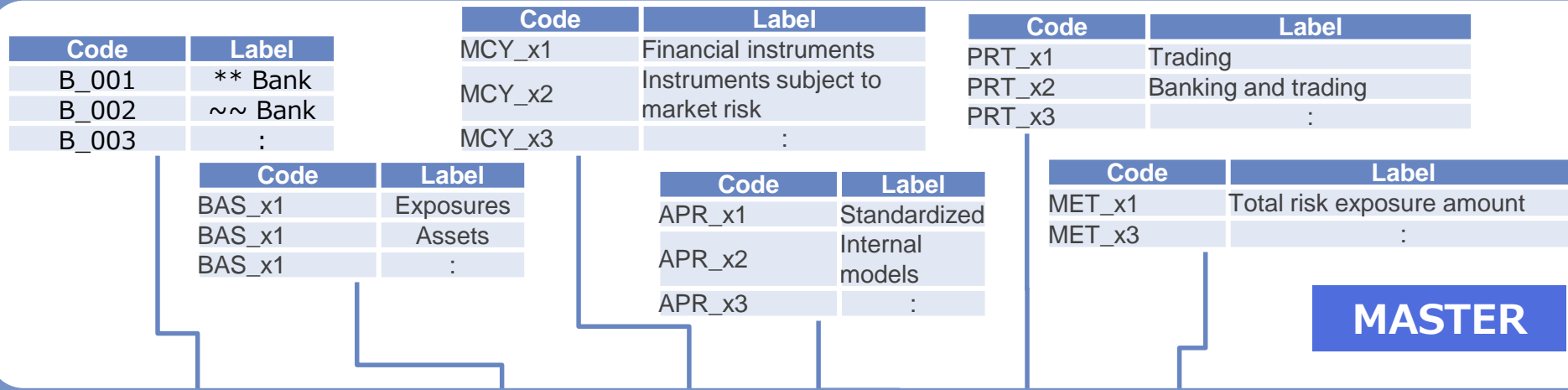
Company	Fiscal Year	Base	Main category	Approach	Portfolio	Main Metric	Value
PQR Bank	2017	Exposures	Financial instruments	Standardized	Trading	Total risk exposure amount	7,873,000
							3,706,000
			Instruments subject to market risk	Internal models	Banking and trading	Adjusted stressed VaR	6,498,000
						Adjusted VaR	5,060,000
						All price risk capital charge for CTP Floor	6,246,000
						All price risk charge for CTP 12 weeks ave	7,915,000
						All price risk charge for CTP last measure	1,007,000
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						Own funds requirements	3,597,000
						Previous day VaR	2,486,000
						SVaR Multiplication factor	65
						Total risk exposure amount	2,294,000
						VaR Multiplication factor	97

Step2: Structuralize

Company	Fiscal Year	Base	Main category	Approach	Portfolio	Main Metric	Value
PQR Bank	2017	Exposures	Financial instruments	Standardized	Trading	Total risk exposure amount	7,873,000
PQR Bank	2017	Exposures	Financial instruments	Internal models	Trading	Total risk exposure amount	3,706,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Adjusted stressed VaR	6,498,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Adjusted VaR	5,060,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	All price risk capital charge for CTP Floor	6,246,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	All price risk charge for CTP 12 weeks ave	7,915,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	All price risk charge for CTP last measure	1,007,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Average incremental default and migration risk capital charge	6,622,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Incremental default and migration risk capital charge last measure	6,093,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Latest available stressed VaR	5,279,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Own funds requirements	3,597,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Previous day VaR	2,486,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	SVaR Multiplication factor	65
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	Total risk exposure amount	2,294,000
PQR Bank	2017	Exposures	Instruments subject to market risk	Internal models	Banking and trading	VaR Multiplication factor	97

Step3: Extract meta data and create tables in RDB

RDB



Company	Fiscal Year	Base	Main category	Approach	Portfolio	Main Metric	Value
B_001	2017	BAS_x1	MCY_x1	APR_x1	PRT_x1	MET_x1	7,873,000
B_001	2017	BAS_x1	MCY_x1	APR_x2	PRT_x1	MET_x2	3,706,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x3	6,498,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x4	5,060,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x5	6,246,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x6	7,915,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x7	1,007,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x8	6,622,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x9	6,093,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x10	5,279,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x11	3,597,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x12	2,486,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x13	
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x14	2,294,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x15	97

TRANSACTION

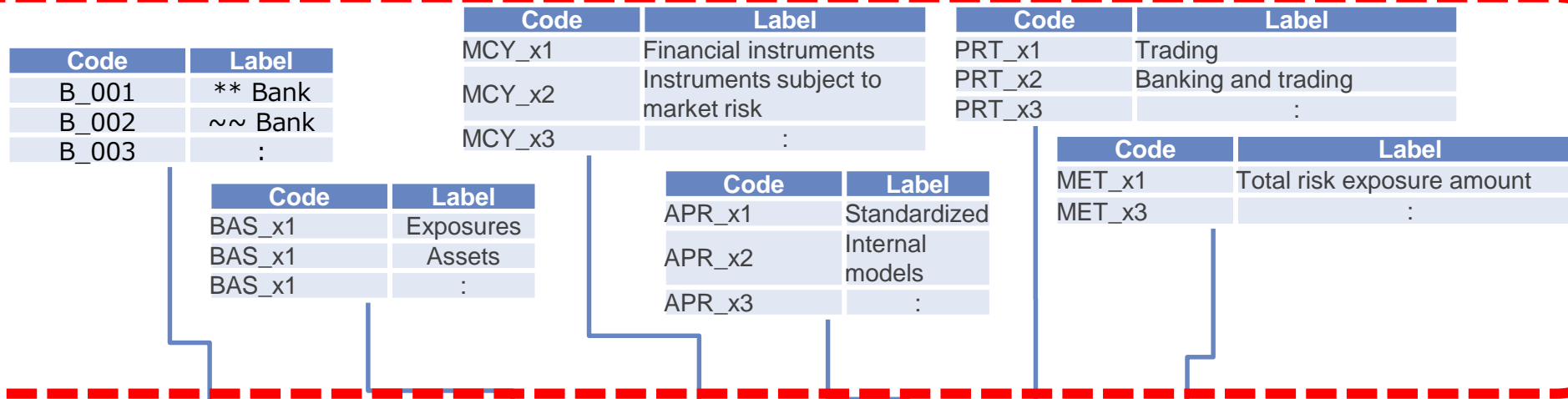
Step4: When new attribute added, edit Master-table

The more granular data is demanded, the more detailed maintenance work is needed,

Then system maintenance cost increases accordingly.

Code	Label	Code	Label	Code	Label	Code	Label
B_001	** Bank	MCY_x1	Financial instruments	PRT_x1	Trading	MET_x1	Total risk exposure amount
B_002	~~ Bank	MCY_x2	Instruments subject to market risk	PRT_x2	Banking and trading	MET_x2	Adjusted stressed VaR
B_003		MCY_x3		PRT_x3	:	MET_x3	
Code	Label	Code	Label	Code	Label	Code	Label
BAS_x1	Exposures	APR_x1	Standardized				
BAS_x2	Assets	APR_x2	Internal model				
BAS_x3		APR_x3	:				
Code	Label	Code	Label	Code	Label	Code	Label
Company	Fiscal Year	Base	Main category	Approach	Portfolio	Main Metric	Value
B_001	2017	BAS_x1	MCY_x1	APR_x1	PRT_x1	MET_x1	7,873,000
B_001	2017	BAS_x1	MCY_x1	APR_x2	PRT_x1	MET_x2	3,706,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x3	6,498,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x4	5,060,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x5	6,246,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x6	7,915,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x7	1,007,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x8	6,622,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x9	6,093,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x10	5,279,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x11	3,597,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x12	2,486,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x13	65
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x14	2,294,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x15	97

How to apply XBRL for complicated report?(1)



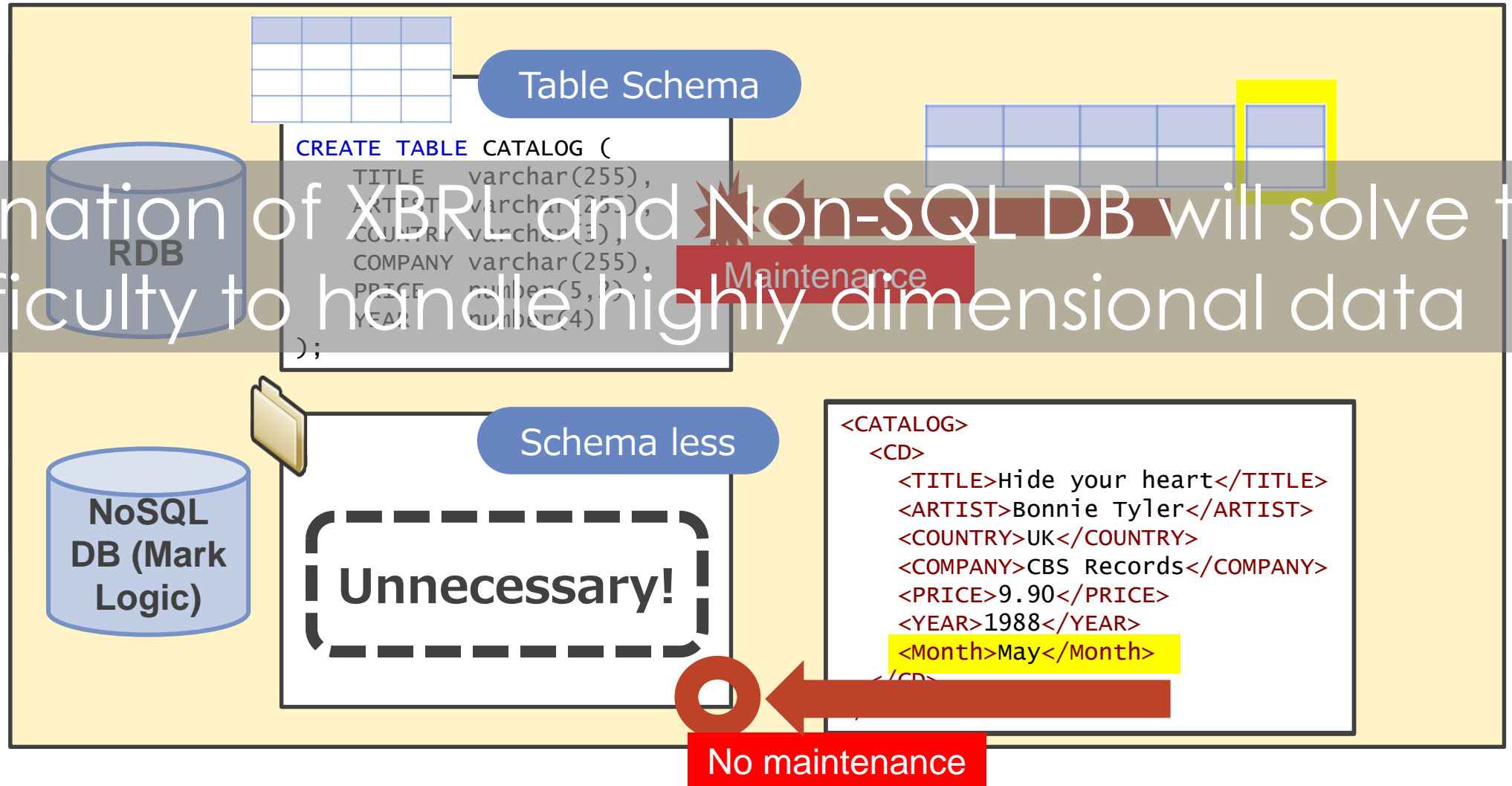
Taxonomy

Instance

Company	Fiscal Year	Base	Main category	Approach	Portfolio	Main Metric	Value
B_001	2017	BAS_x1	MCY_x1	APR_x1	PRT_x1	MET_x1	7,873,000
B_001	2017	BAS_x1	MCY_x1	APR_x2	PRT_x1	MET_x2	3,706,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x3	6,498,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x4	5,060,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x5	6,246,000
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B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x13	65
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x14	2,294,000
B_001	2017	BAS_x1	MCY_x2	APR_x2	PRT_x2	MET_x15	97

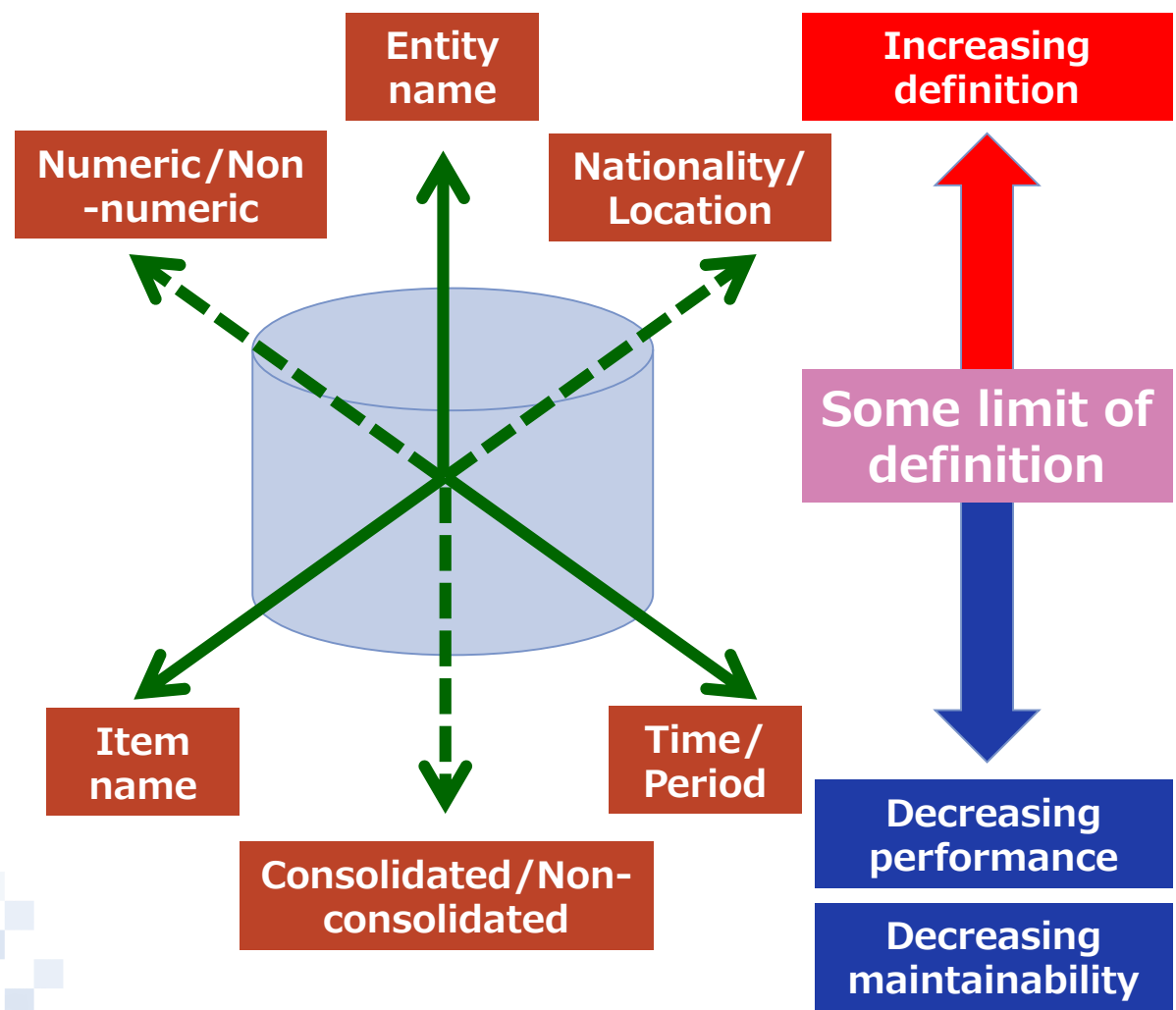
Comparison between RDB and NoSQL DB

Combination of XBRL and Non-SQL DB will solve the difficulty to handle highly dimensional data

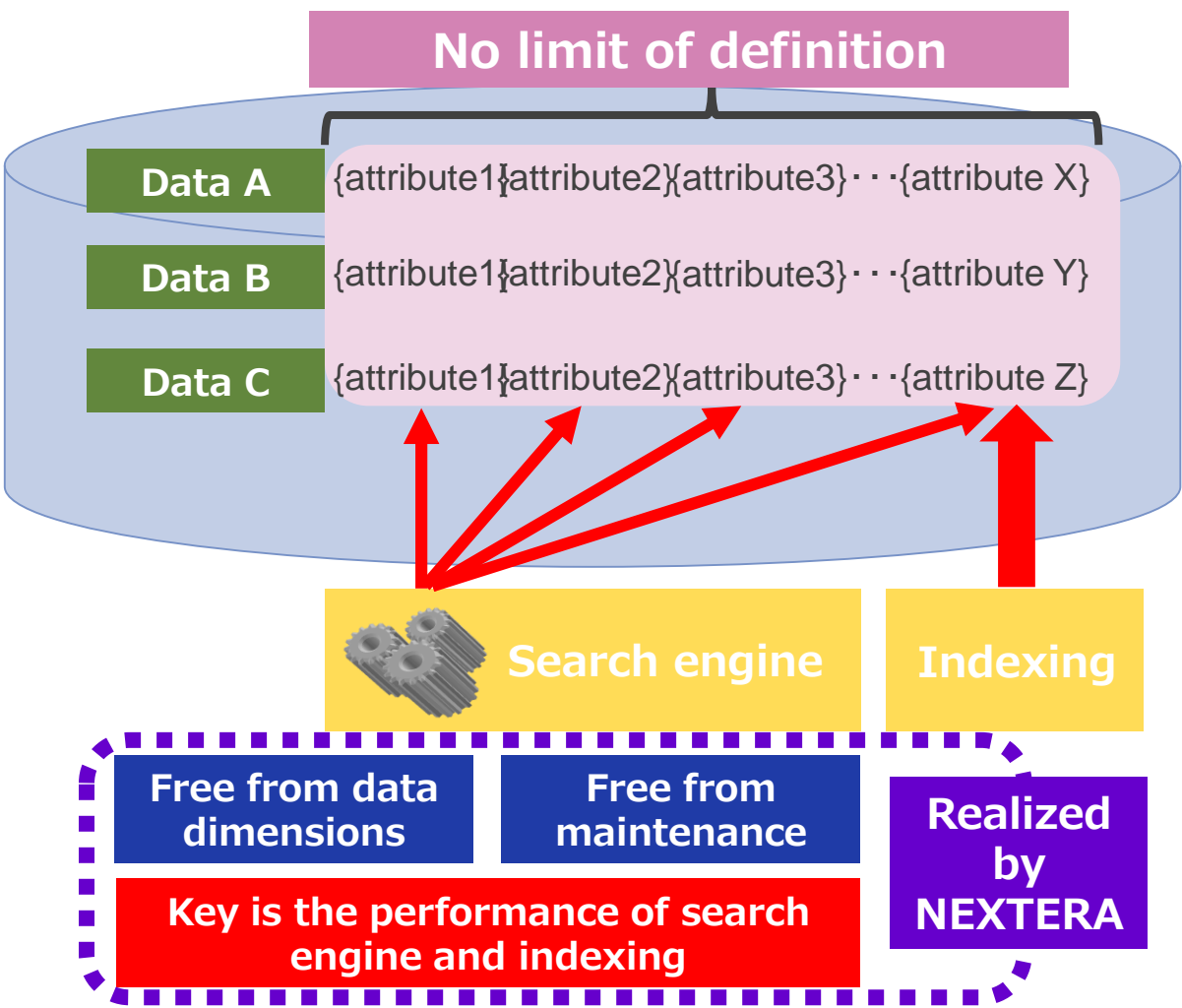


Relational Data Base and Non-SQL Data Base

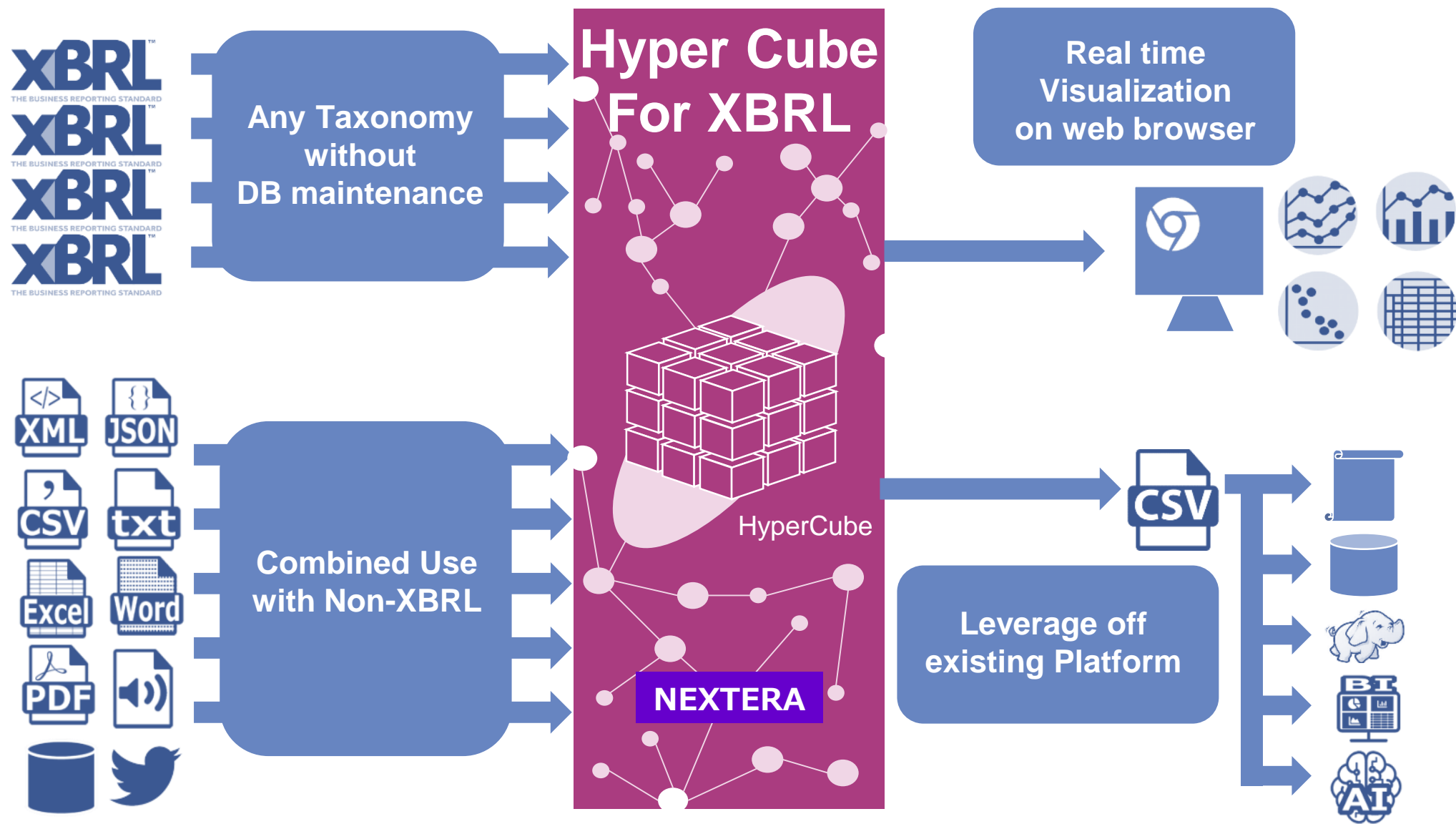
Relational Data Base



Non-SQL Data Base



Key Technologies

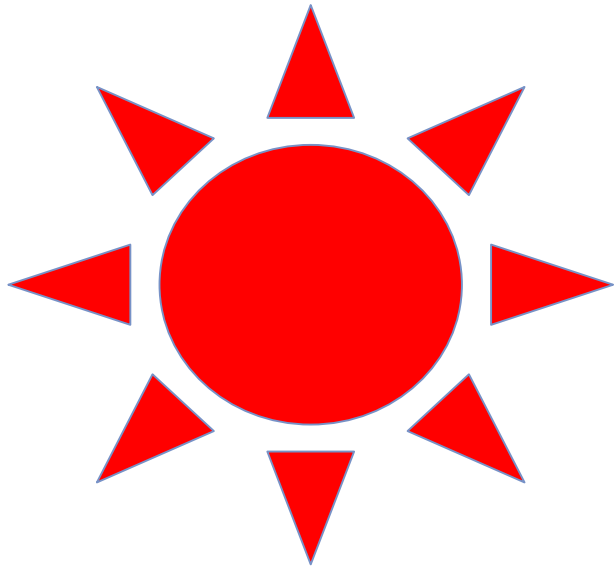


Experiences in the Bank of Japan

In 2003, just after the burst of bubble economic boom, BOJ made an important decision

Implementation of XBRL

And, the mission as a project leader was appointed on myself



A a bolt from the blue, 晴天霹雳, 青天の霹靂 for me

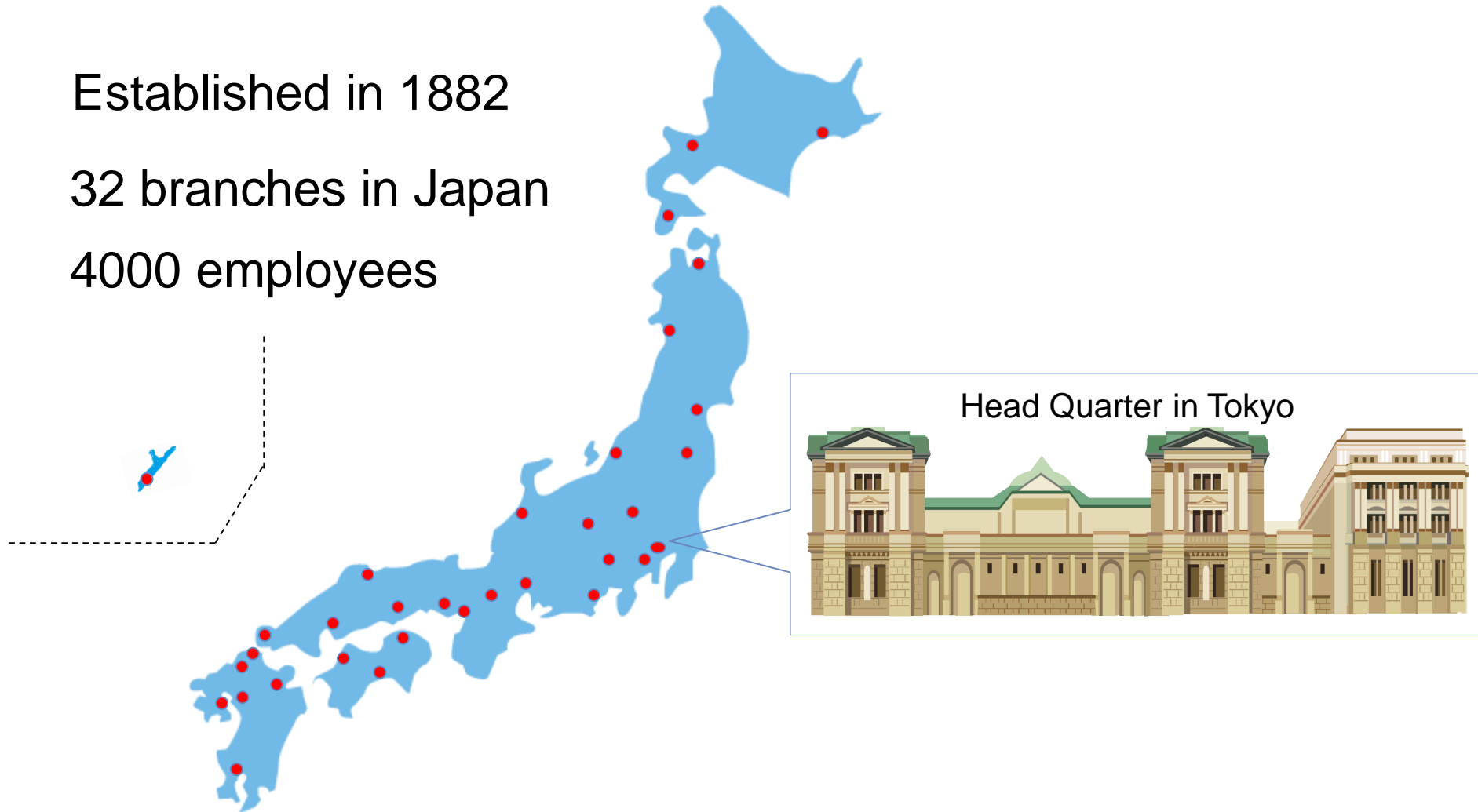
Network of BOJ

BOJ is the central bank of Japan

Established in 1882

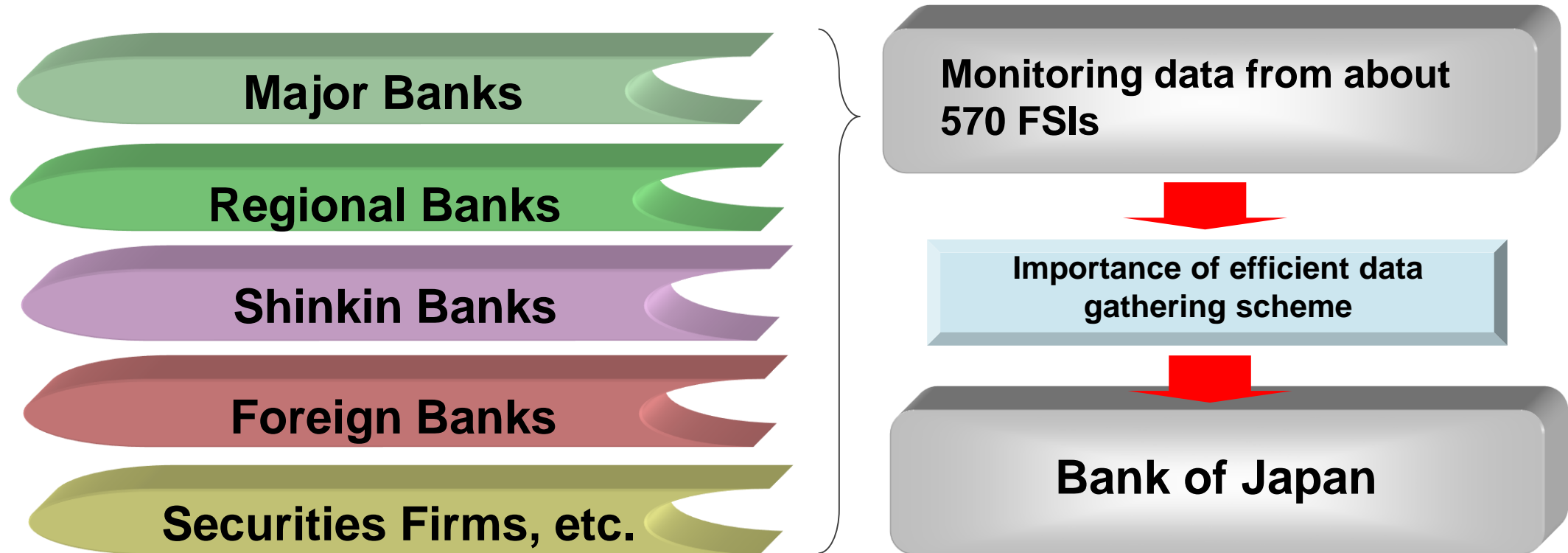
32 branches in Japan

4000 employees



Monitoring Coverage of Financial Service Institutions

BOJ covers about 570 FSIs and gathers various daily, weekly, monthly and annual data for monitoring.



However, there were three major issues to be solved

- ✓ How to check whether XBRL is suitable for the BOJ's data-gathering framework?
- ✓ How to make people aware of the merits of implementing XBRL?
- ✓ How to let people use XBRL?

However, there were three major issues to be solved

However, there was no textbook

✓ **How to check whether XBRL is suitable for the BOJ's data framework?**

Project which could not be failed was started



Merits of

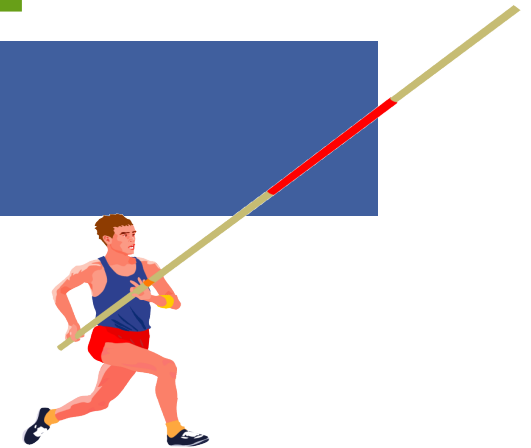
✓ **How to let people use XBRL?**

How XBRL was implemented?

✓ Step by step approach



✓ Feedback of the latest technical advancements to the users, i.e., Formula-link

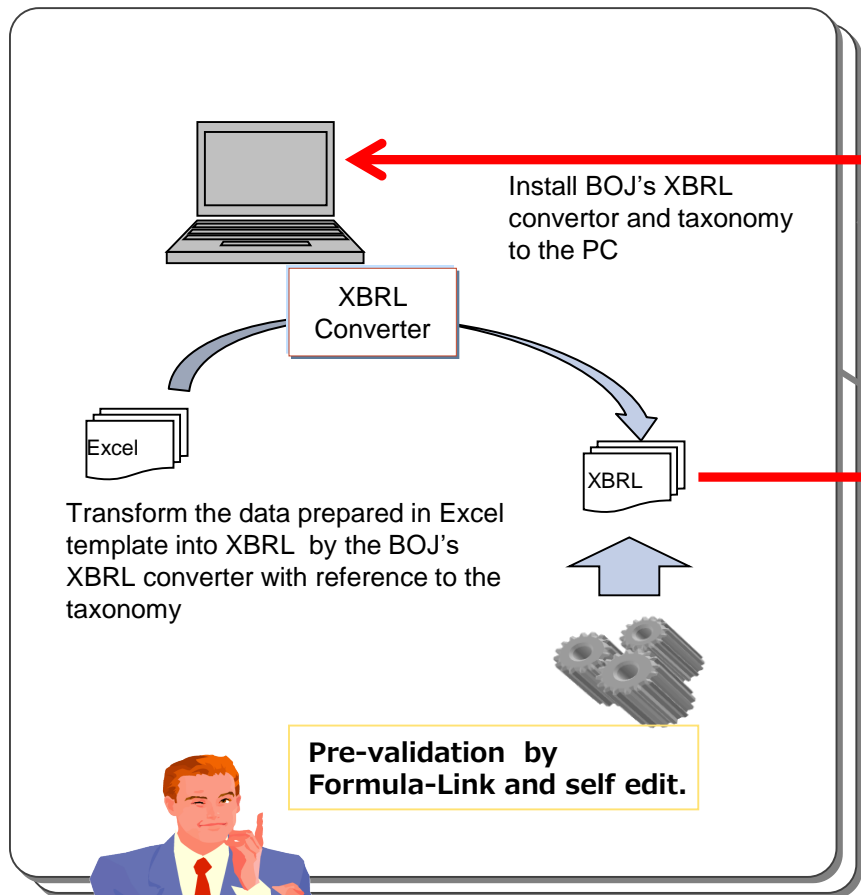


✓ Low cost and easy operational scheme

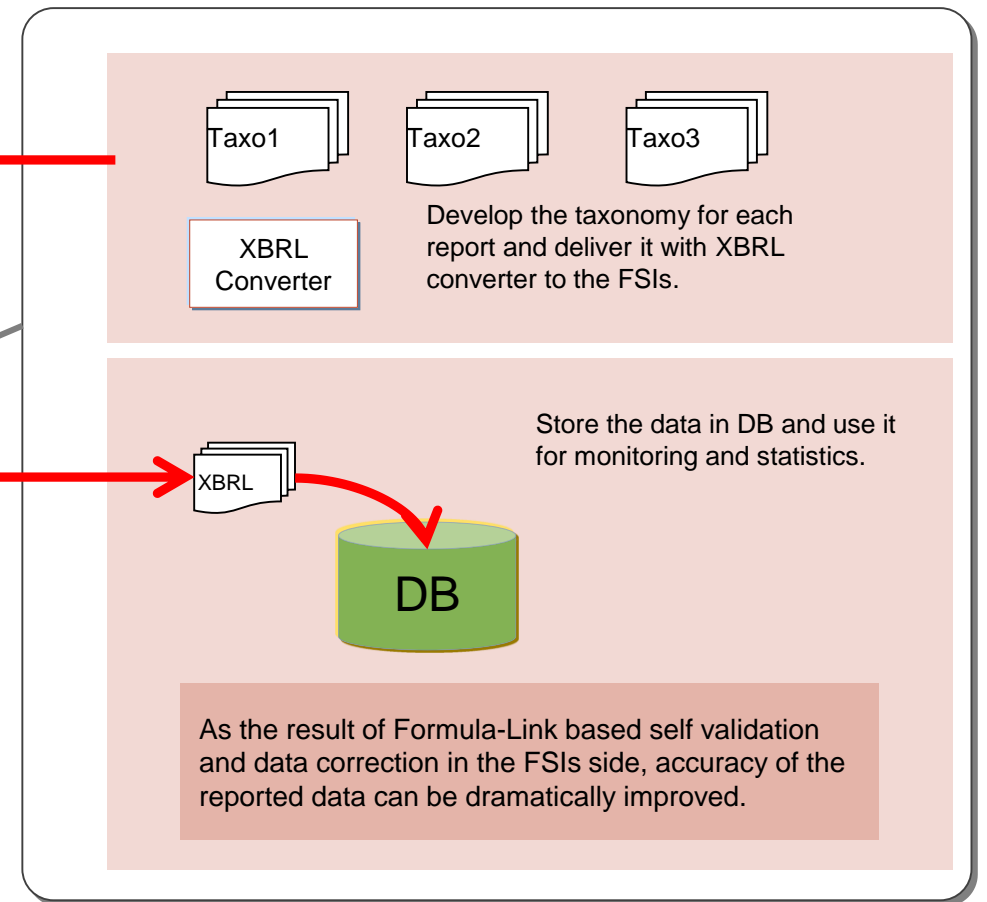


BOJ's XBRL based monitoring data gathering scheme

Financial Service Institutions



BOJ

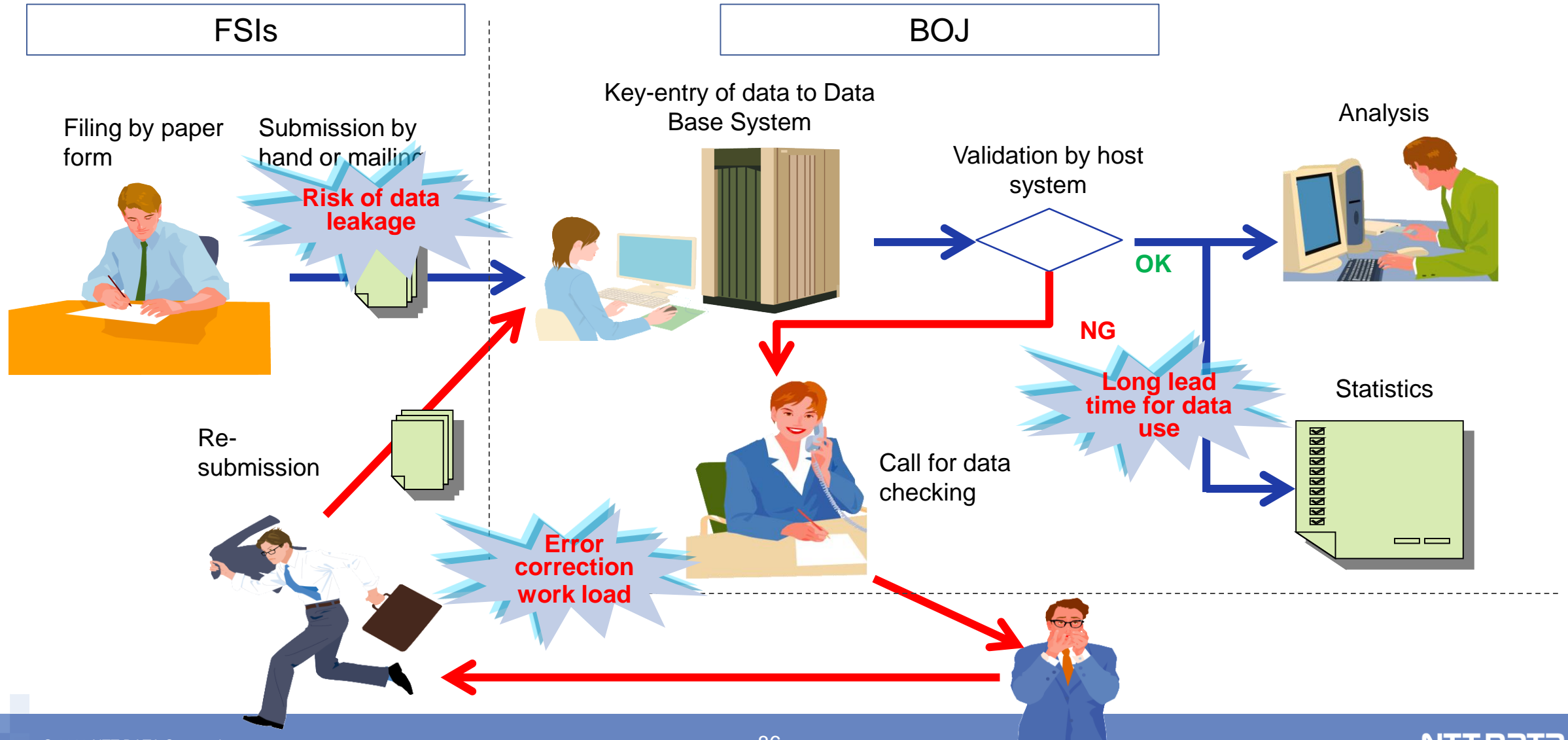


Features of the BOJ's XBRL reporting scheme

1. All necessary tools, taxonomy, and data communication infrastructure are supplied by the BOJ for free.
2. FSIs can generate the XBRL instance file, without any third-party assistance.
3. By using Formula-Link, data accuracy has been dramatically improved.

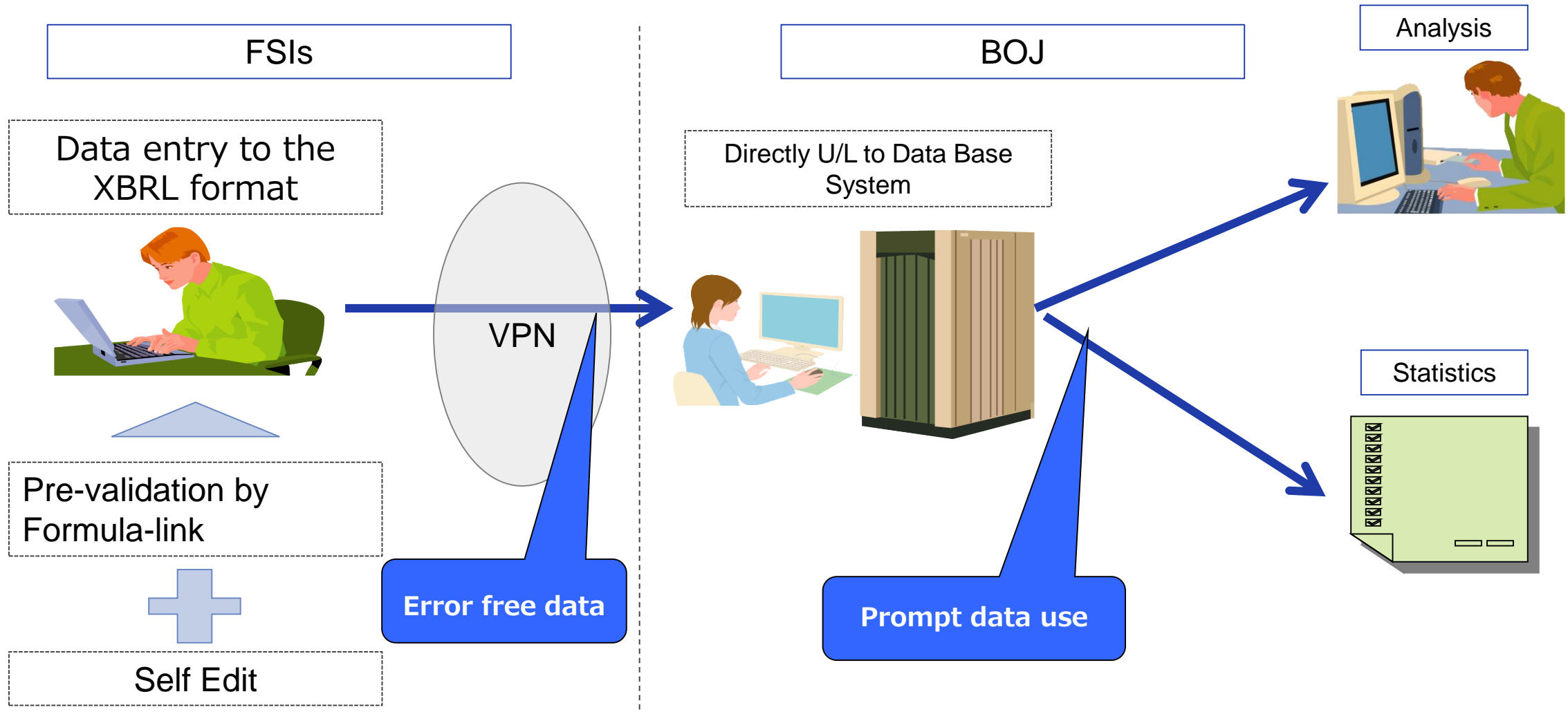
What was changed by XBRL? (1)

Typical Reporting Work Flow before XBRL



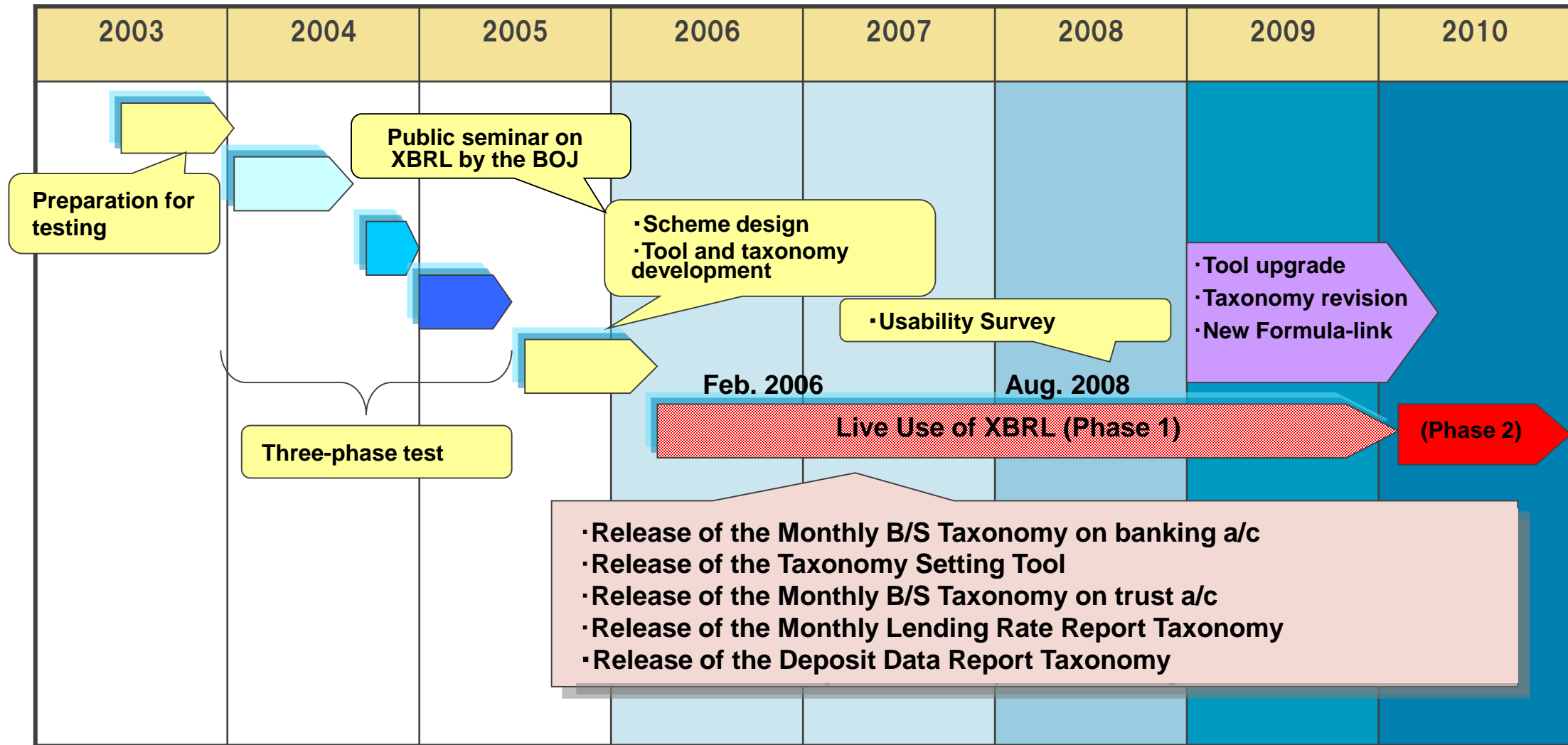
What was changed by XBRL? (2)

Typical Reporting Work Flow post XBRL



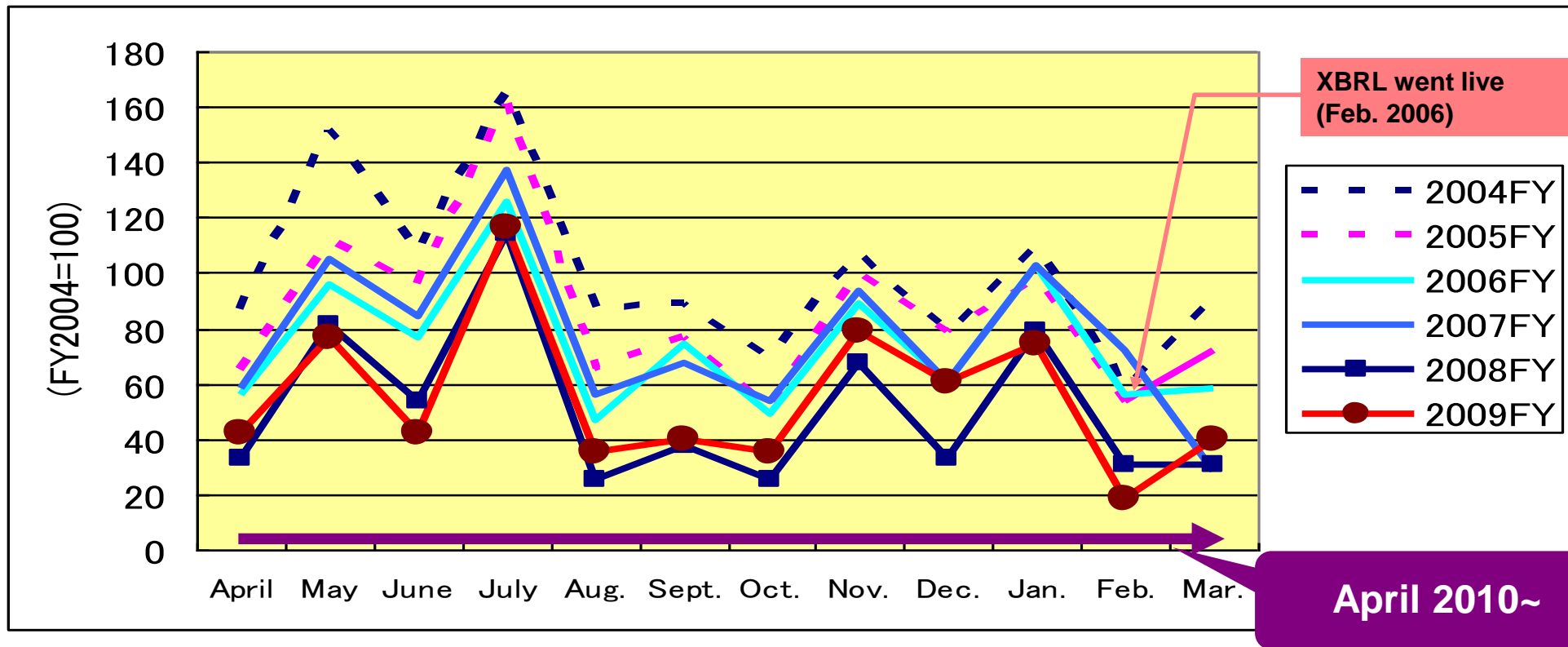
Improvement in the efficiency of total reporting process

Project History



Example of enhancement of reporting efficiency

Reduction of the required part-time manpower in the BOJ's database operation team



Summery of Key Success Factors

- ✓ **Consider the Merits, not only for Authority but also for Reporting side**
- ✓ **Well-designed and sustainable scheme**
- ✓ **Well-organized and highly-motivated team**

Thoughts for XBRL implementation

Taxonomy Building

For the taxonomy design, following points must be considered

1. Difference between Regulatory report, Financial disclosure and Tax filing.
2. How to define the variation of financial documents used in the society.
3. Decision to accept AS-IS reports or require standardized report.
4. Decision to allow or not to allow the extension of standard report.
5. If not allow, how to control the demand from filers to extend their taxonomy.
6. In any cases, taxonomy differs or changes from time to time, then how to manage the increasing variation of taxonomy & instance.
7. How to validate incoming files, then save in Data Base and utilize/disclose these data.
8. How to reduce reporting burden and realize sustainability of total business scheme.

Important factor to realize smooth project

1. Proper assessment of project size in work-load, budget and project period.
2. Ensure the business demand as precise as possible and freeze the requirement after the design step.
⇒ For Government mission critical system, so-called agile approach is not necessarily suitable. Conservative water-fall approach is often suitable.
3. Prepare special project team who must focus on the project, stepping away from other daily missions.
4. Prepare the suitable budget. If it is difficult to ensure the budget, consider the split of project into several stages.
5. Involvement of filers and audit firms into the project to get wider acknowledgement by the society
6. Consider the merit to the society and the sustainability of the total scheme.

XBRL for Non-Financial Reporting

Case: Ministry of Environment

Important key word to focus on latest
capital/financial market trend

Environment Social Governance

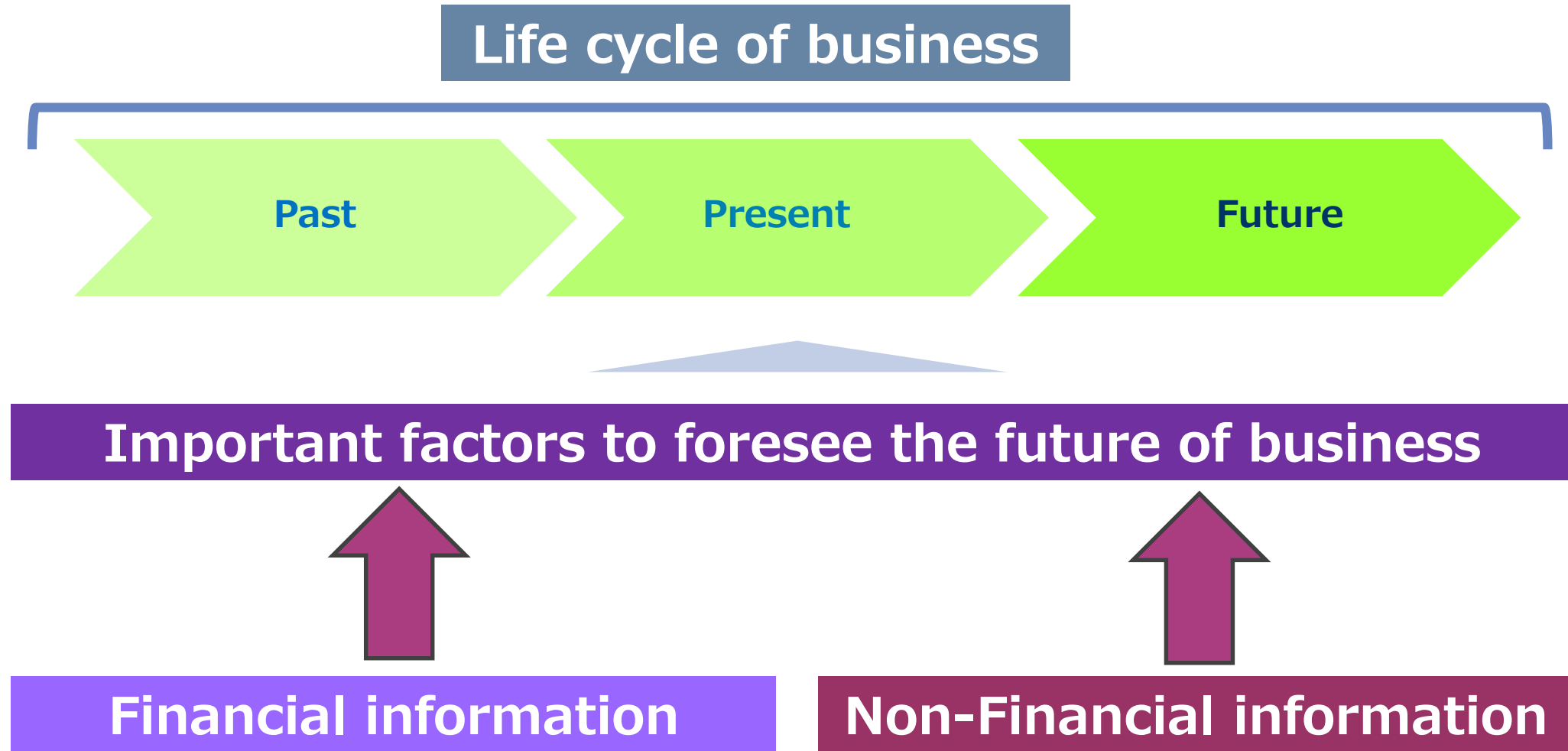
E: Corporate attitude for Environmental issues

S: Corporate attitude for Social issues

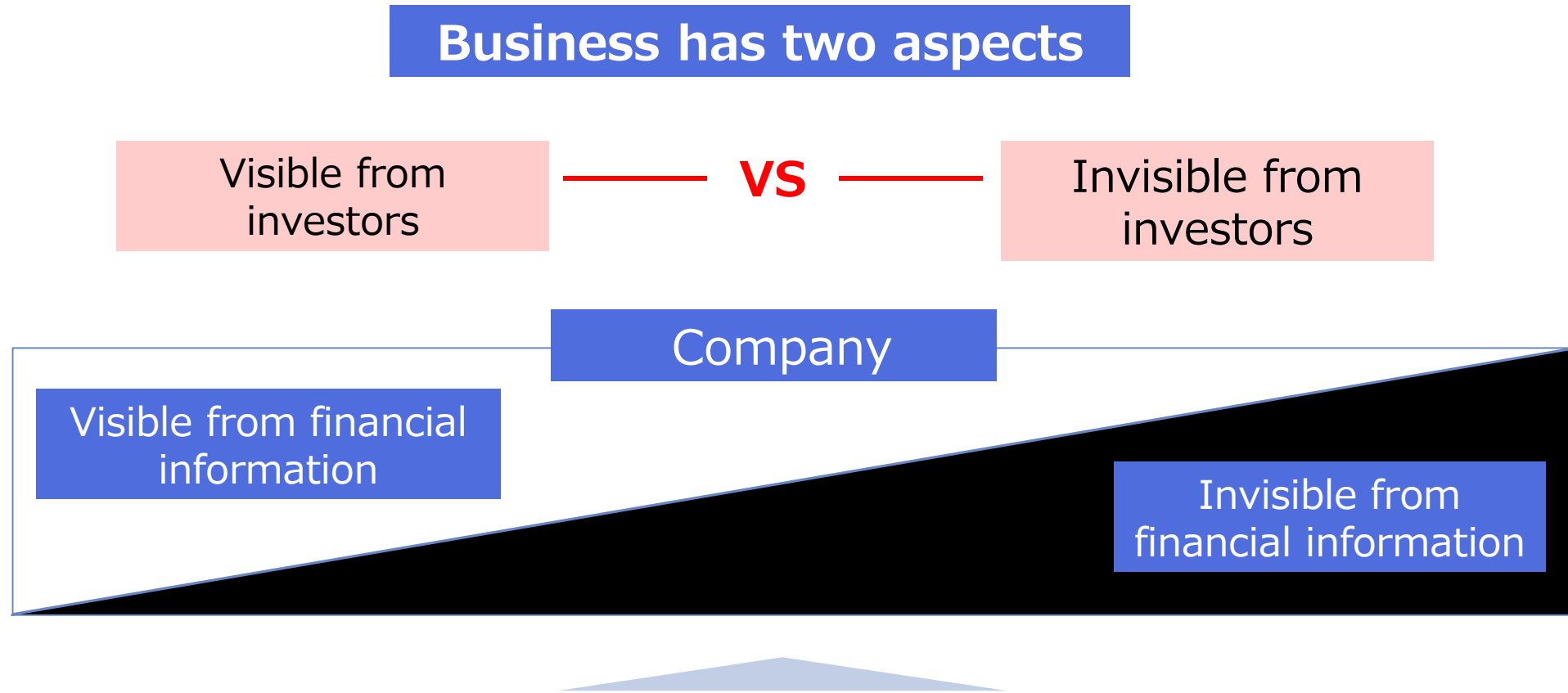
G: Corporate attitude for Governance issues

>>> Changes in investment trend from business performance oriented style to non-financial aspect oriented style <<<

Why Non-financial information? (1)

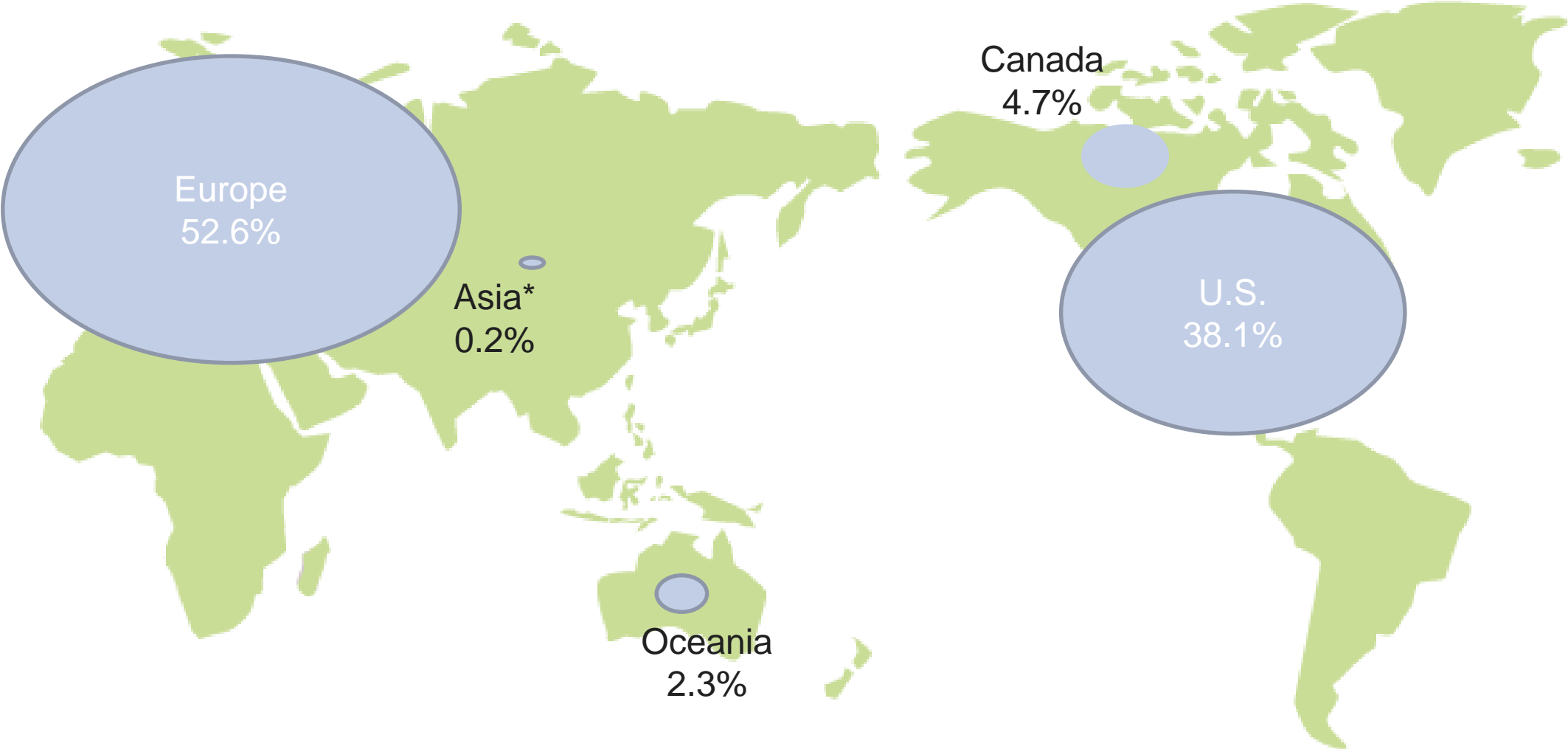


Why Non-financial information? (2)



Non-Financial information, such as ESG information supplements the Financial information and enhances the business assessment process for investors to understand the **business philosophy of the company**

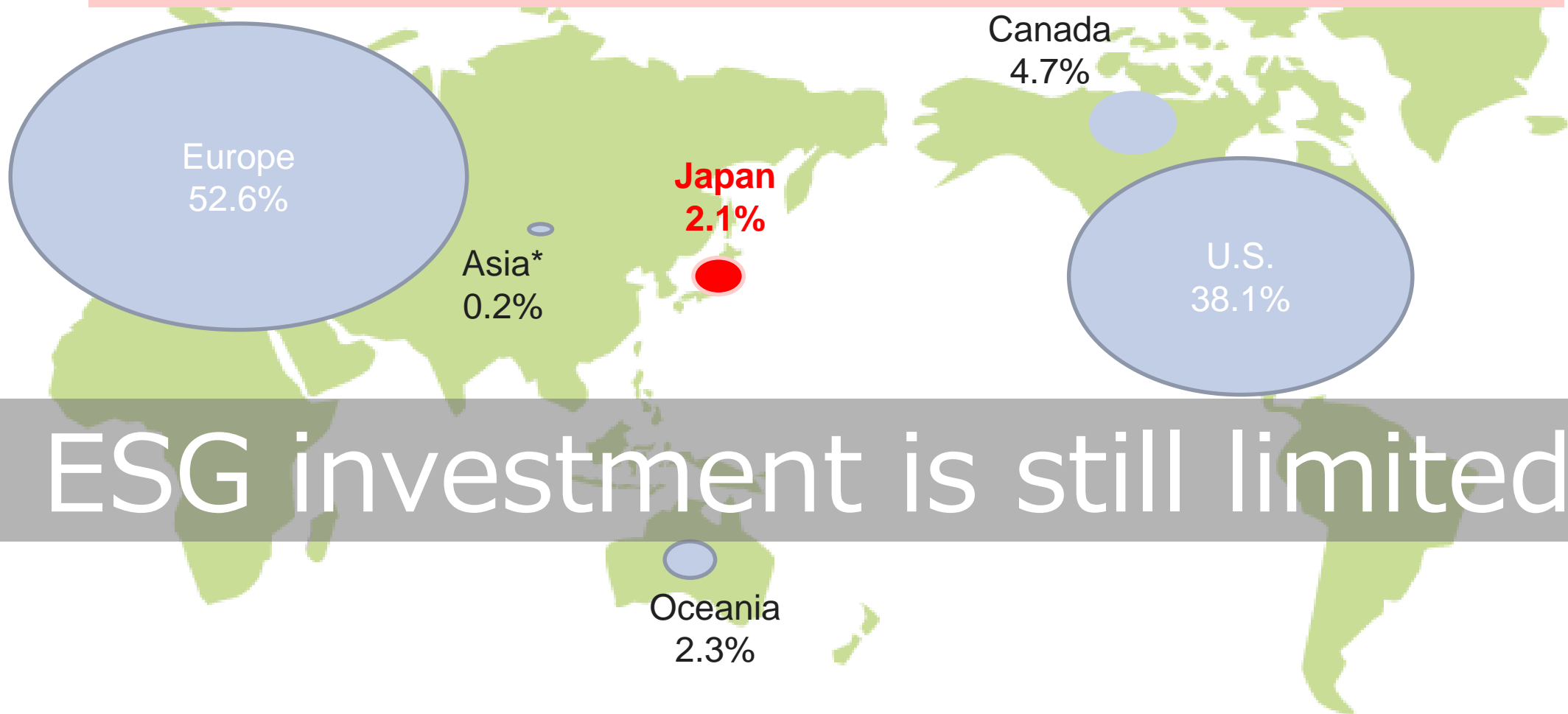
ESG investment trend (1)



*Excluding Japan

Source: Global Sustainable Investment Review 2016

Reality in Japan



*Excluding Japan

Source: Global Sustainable Investment Review 2016

Program of promoting ESG investment in JAPAN

“Basic idea for ESG investment”
2017
“Financial behavior principles
towards sustainable society” 2011

Investors/
Banks

Providing
Environmental
Report Guideline

ESG
information

Providing
Disclosure Platform

Non-ESG
management
companies

ESG management
companies

Two important features

Standardized format based on XBRL

- Ensuring the data comparability between companies/ different reporting period

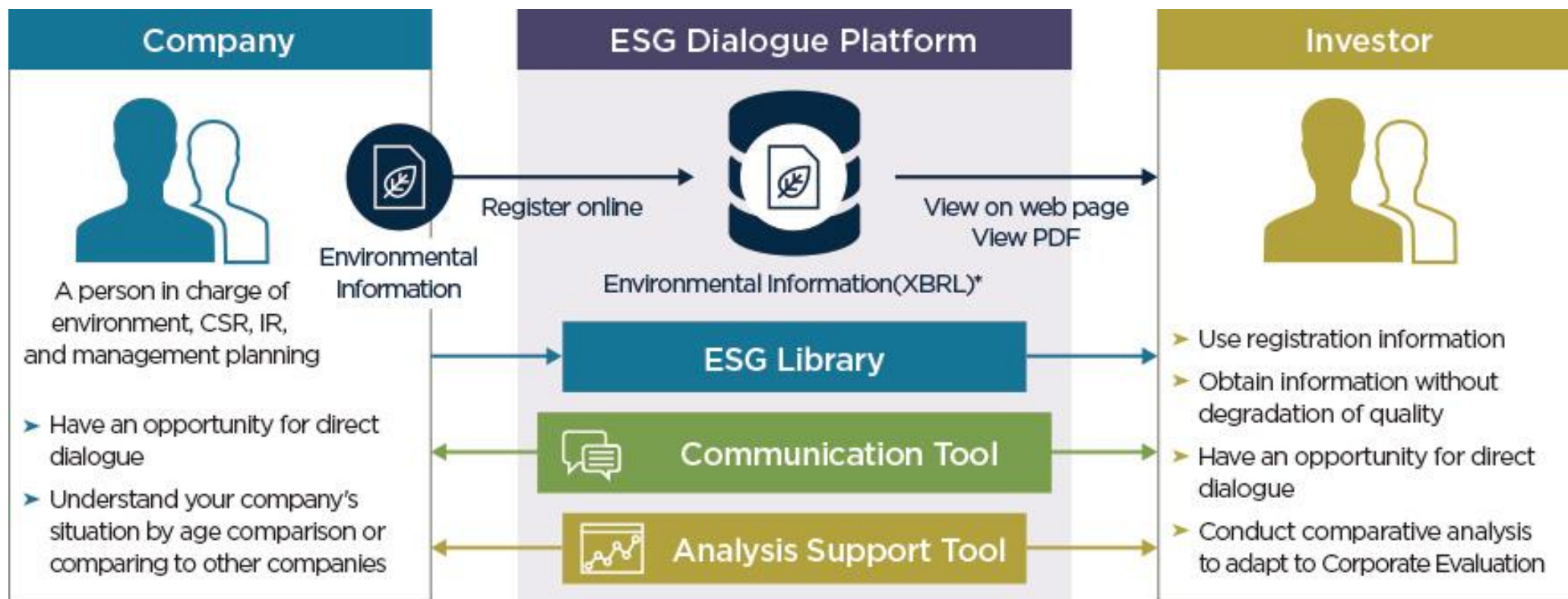
Providing disclosure platform for filers

- Recently, disclosing ESG or not is becoming a key factor for investors to evaluate the target companies
- Creating open and efficient disclosure platform will contribute to the fair evaluation on Japanese industries

Project over view

World's first interactive platform for environment report with XBRL

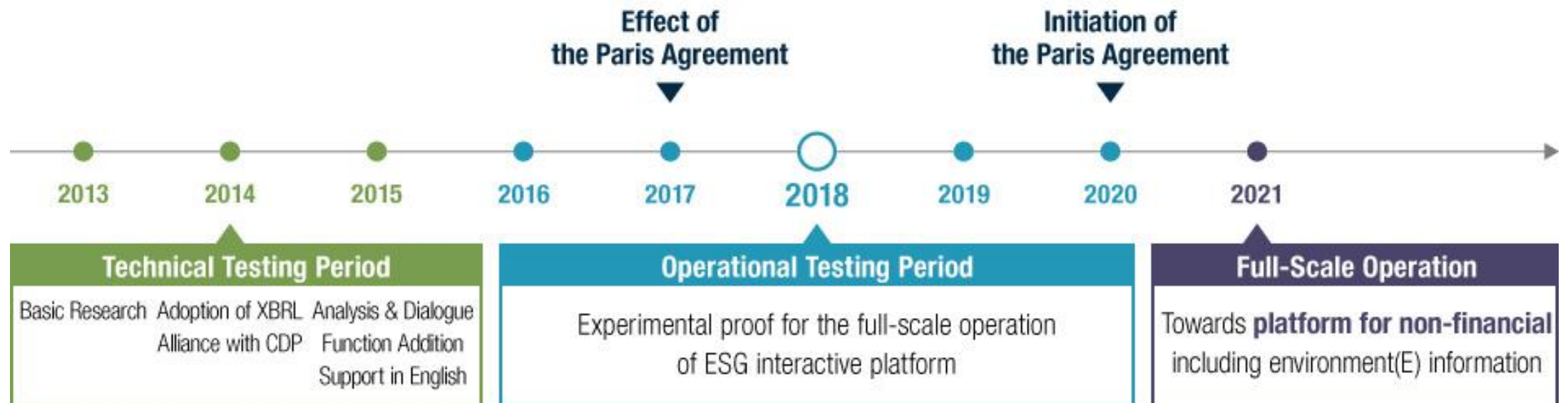
Integrated with data base and communication facility between company and investor



Footpath of the project

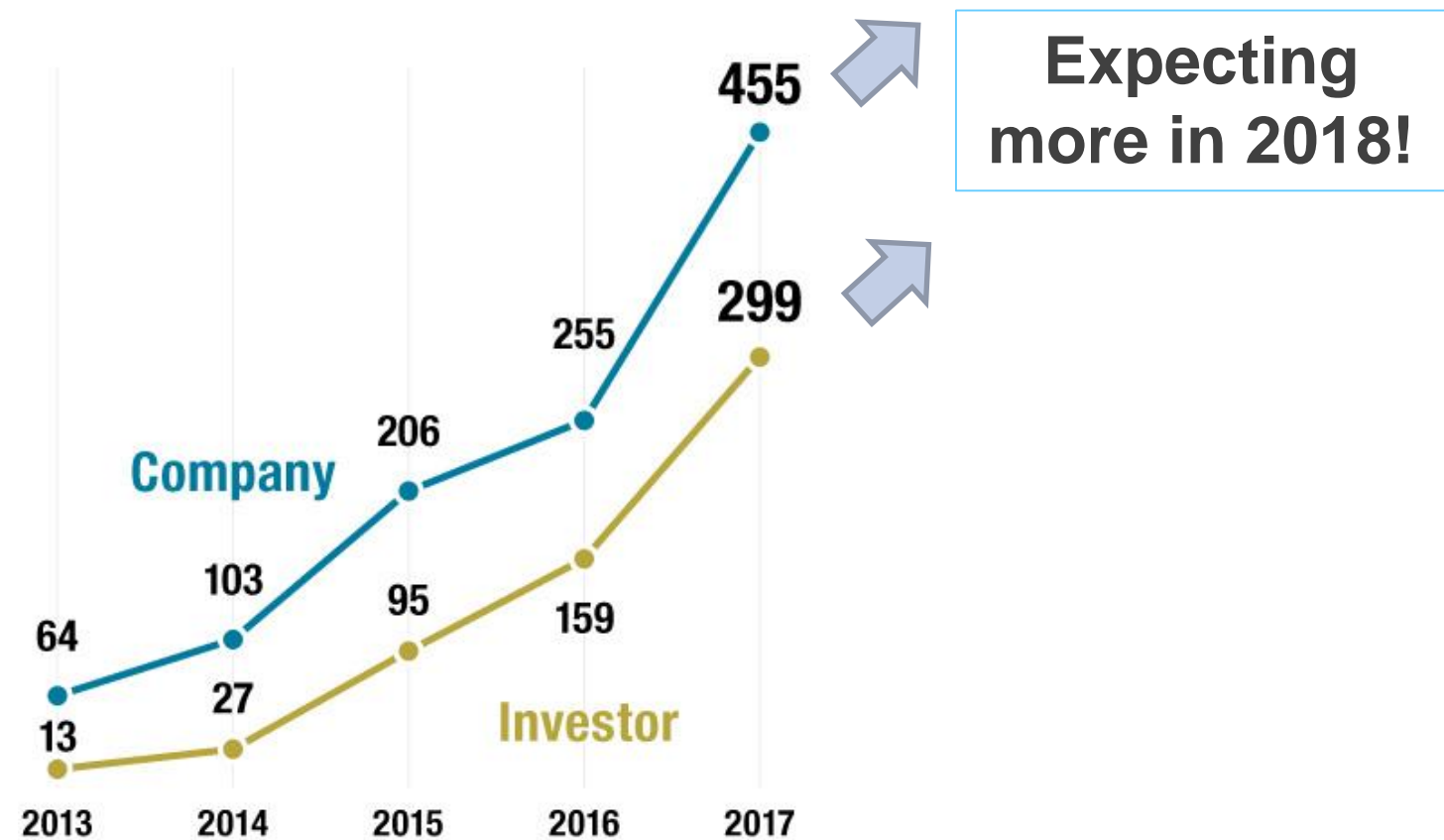
Starting with feasibility test of platform

Currently evaluating business flow and rules to be implemented

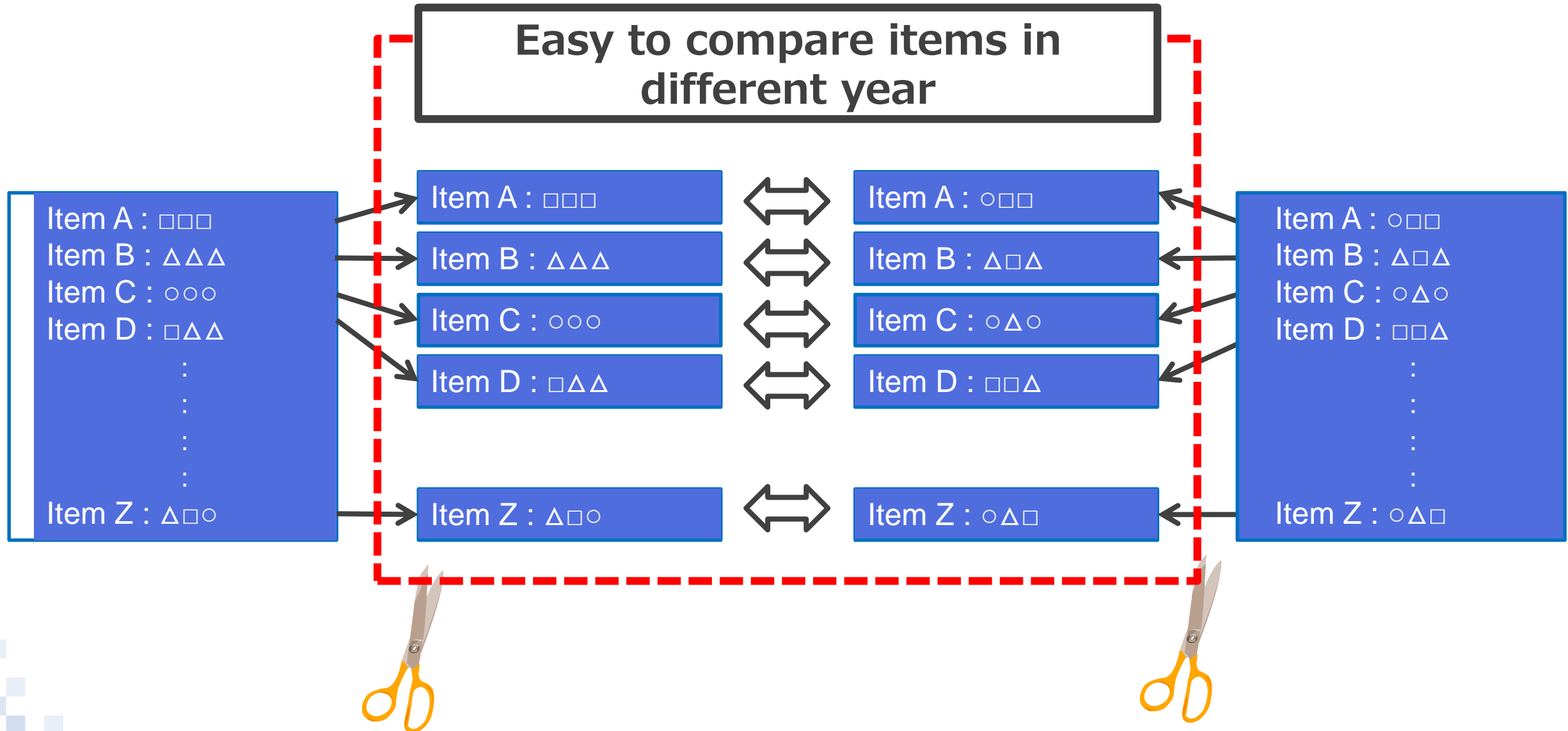


Number of project participants

Increasing year by year



Merit of using XBRL for Non-financial information



Example (1)



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Joko Widodo

From Wikipedia, the free encyclopedia

Joko Widodo (popularly known as **Jokowi**; born 21 June 1961) is the seventh [President of Indonesia](#), in office since 2014. Previously he was the Mayor of [Surakarta](#) from 2005 to 2012 and Governor of [Jakarta](#) from 2012 to 2014. He is the first Indonesian president without a high-ranking political or military background.^[1]

Jokowi was nominated by his party, the [Indonesian Democratic Party of Struggle](#) (PDI-P), to run in the 2012 Jakarta gubernatorial election with [Basuki Tjahaja Purnama](#) (often known as *Ahok*)^[2] as his running mate.^[3] Jokowi was elected as Governor of Jakarta on 20 September 2012 after a second round runoff election in which he defeated the incumbent governor [Fauzi Bowo](#).^[4] Jokowi's win was widely seen as reflecting popular voter support for "new" or "clean" leaders rather than the "old" style of politics in Indonesia.^[5]

His nomination as PDI-P candidate for the 2014 [presidential election](#) was announced on 14 March

His Excellency
Ir. H.
Joko Widodo



7th President of Indonesia
Incumbent
Assumed office



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Shinzō Abe

From Wikipedia, the free encyclopedia

In this [Japanese name](#), the family name is [Abe](#).

Shinzō Abe (安倍 晋三 *Abe Shinzō*[?], IPA: [aβe ɕimzōː]; born 21 September 1954) is the [Prime Minister of Japan](#) and the President of the [Liberal Democratic Party](#) (LDP). He is *one of the longest serving* PMs in Japanese history.

Hailing from a politically prominent family, at age 52, Abe became Japan's youngest post-war prime minister, and the first to be born after [World War II](#), when he was elected by a special session of the [National Diet](#) in September 2006. Abe resigned on 12 September 2007, for health reasons. Abe was replaced by [Yasuo Fukuda](#), beginning a string of five Prime Ministers, none of whom retained office for more than sixteen months, before Abe staged a political comeback.


On 26 September 2012, Abe defeated former [Minister of Defense Shigeru Ishiba](#) for the LDP presidency. Following the LDP's landslide victory in the 2012

Shinzō Abe
MP
安倍 晋三



Abe in 2016

Example (2)




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3 Political career

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3.2 Governor of Jakarta

3.2.1 Blusukan

3.2.2 Lelang Jabatan

3.2.3 Health care program

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presidential election

was announced on 14 March

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Shinzō Abe

MP

安倍 晋三



Abe in 2016

Example (3)



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- 3.4.7 Relations with his political party

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 - 3.1.1 Economy
 - 3.1.2 Education

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MP
安倍 晋三



Abe in 2016

Example (4)

If common chapter structure/standard style sheet is used,

The image displays two side-by-side Wikipedia article templates for comparison. Both templates use a common chapter structure and style sheet. The left template is for **Joko Widodo**, and the right template is for **Shinzō Abe**. Both templates feature a table of contents on the left side, listing chapters and sub-chapters. The central part of each template contains a portrait of the subject, with the name and title displayed below it. The right side of each template contains a brief biographical summary. The templates are identical in structure and style, demonstrating that a common chapter structure and standard style sheet can be used for both human and AI-generated content.

Joko Widodo template structure:

- 1 Early life and education
- 2 Career as an entrepreneur
- 3 Political career
 - 3.1 Mayor of Surakarta
 - 3.2 Governor of Jakarta
 - 3.2.1 Blusukan
 - 3.2.2 Lelang Jabatan
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Shinzō Abe template structure:

- 1 Early life and education
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Not only human but also AI
can easily compare!

Some simple case

Governance Report 2017

Item A : □□□
Item B : △△△
Item C : ○○○
Item D : □△△
:
:
:
:
Item Z : △□○

CEO message

Governance Report 2018

Item A : ○□□
Item B : △□△
Item C : ○△○
Item D : □□△
:
:
:
:
Item Z : ○△□

If CEO message of both year is 100% same, would you like to invest into this company?

If CEO message of 2018 is dramatically changed, what do you think of this company?

XBRL for Regulatory Process Automation

Issues for filers and regulators



Issues for filers and regulators

How to make
report efficiently?

How to analyze
report efficiently?

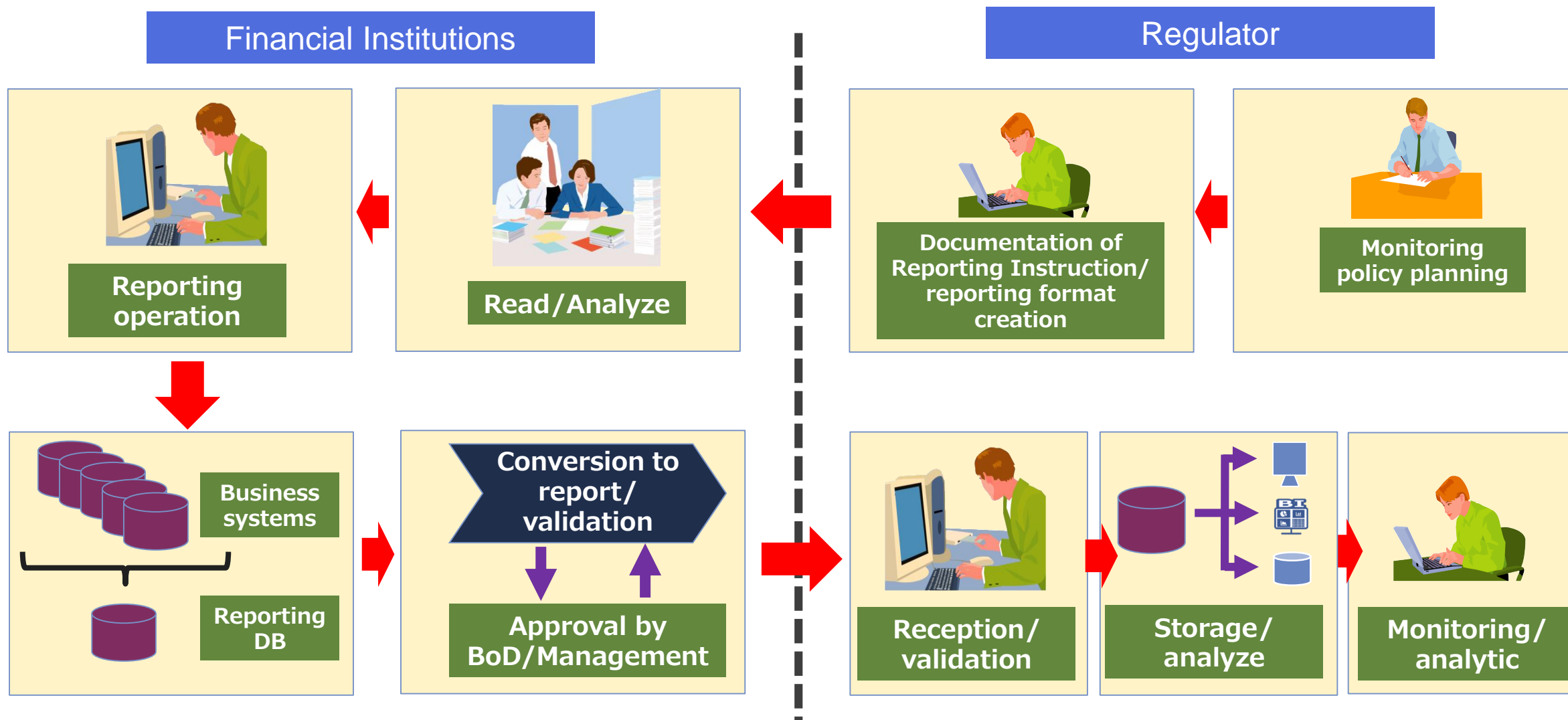
Needs for Reporting Process Automation

The diagram illustrates the needs for reporting process automation. It features a central title 'Needs for Reporting Process Automation' in white text on a dark blue background. Below the title, there are two columns of text in purple boxes, each preceded by a blue downward-pointing arrow. The left column is associated with 'Business Corporations' and the right column with 'Regulators', both of which are written in a light gray font behind the central title. The top row of purple boxes asks 'How to make report efficiently?' and 'How to analyze report efficiently?'. The bottom row asks 'How to use report internally?' and 'How to reduce reporting burden?'.

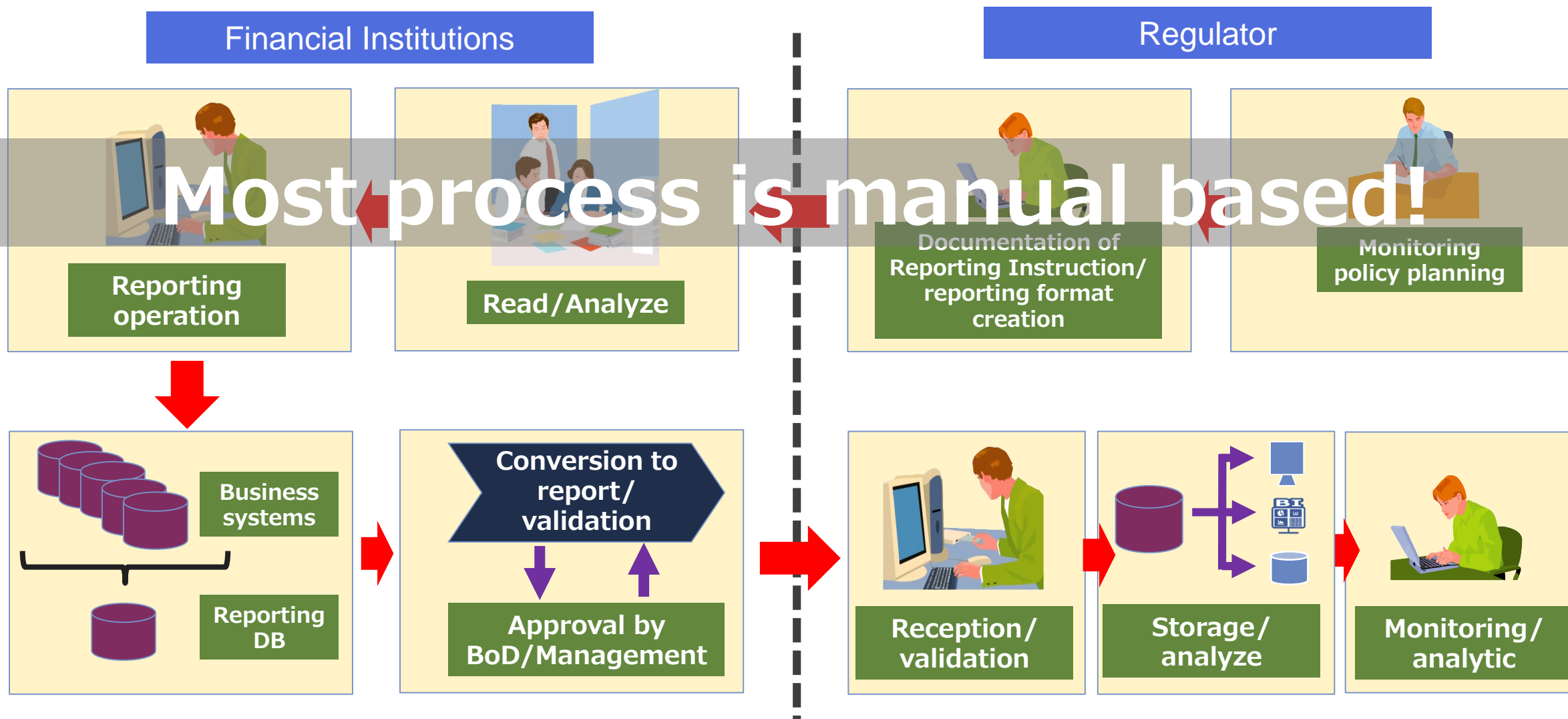
How to use report
internally?

How to reduce
reporting burden?

Block diagram of Regulatory Reporting Process



Block diagram of Regulatory Reporting Process



Key elements for breakthrough

Man-Machine Collaboration



Machine-readable Data format

>>> XBRL <<<

Lower maintenance cost infrastructure

>>> No-SQL DB <<<

Robotics/AI for process automation

>>> RPA/AI OCR <<<



Asian Development Bank and ASEAN+3 Bond Market Guide to Support Development of Mongolia's Bond Market

v1

Satoru Yamadera, ADB
Kosintr Puongsophol, ADB

Workshop on Local Currency Bond Market Development, Ulaanbaatar, Mongolia
Session 4, 29 March 2019

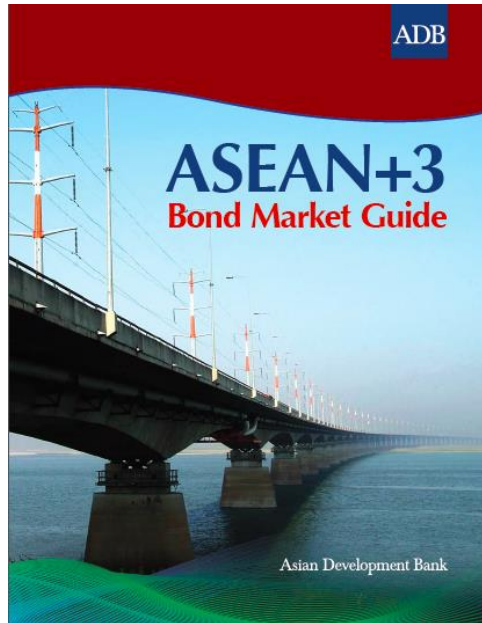
Points to Cover

- Introduction to ASEAN+3 Bond Market Guide
- ASEAN+ Bond Market Guide – Typical Workflow
- ASEAN+ Bond Market Guide – Features Explained
- Mongolia Bond Market Guide
- Suggestions for Mongolia Bond Market Guide
- Q&A

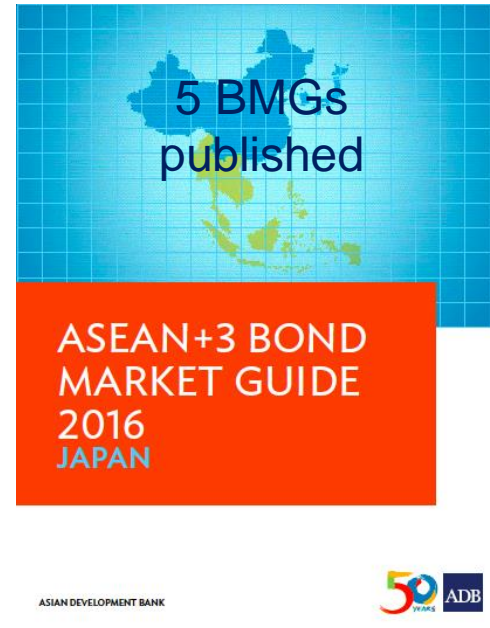
Introduction to ASEAN+ Bond Market Guide (BMG)

- Intended to address information asymmetry, misperceptions
- Particularly relevant for nascent, developing markets
- Review and contributions by major market stakeholders, experts
- Authoritative: approval by policy bodies, regulatory authorities
- Standardised Word template, easy to maintain/update
- Comparative contents supports accessibility for readers
- ADB ensures representative look and feel, publication quality
- Publication on ADB website, AsianBondsOnline; print on demand
- ADB flagship publication series (since 2018)

Evolution of ASEAN+3 Bond Market Guides



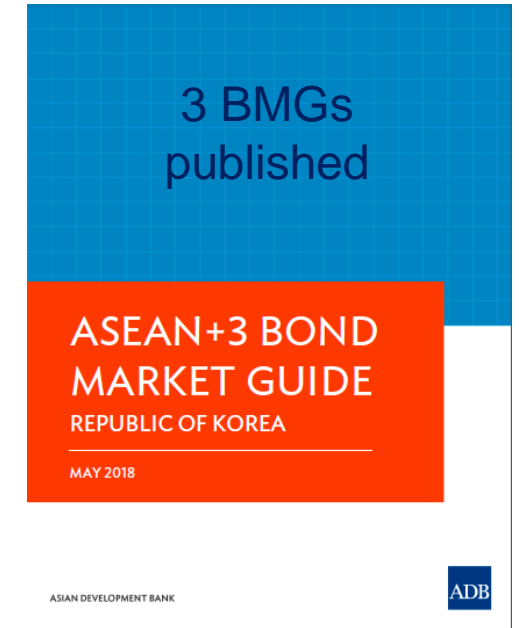
2012
First of its Kind
11 Markets



2016
Individual Market
Publication
Started

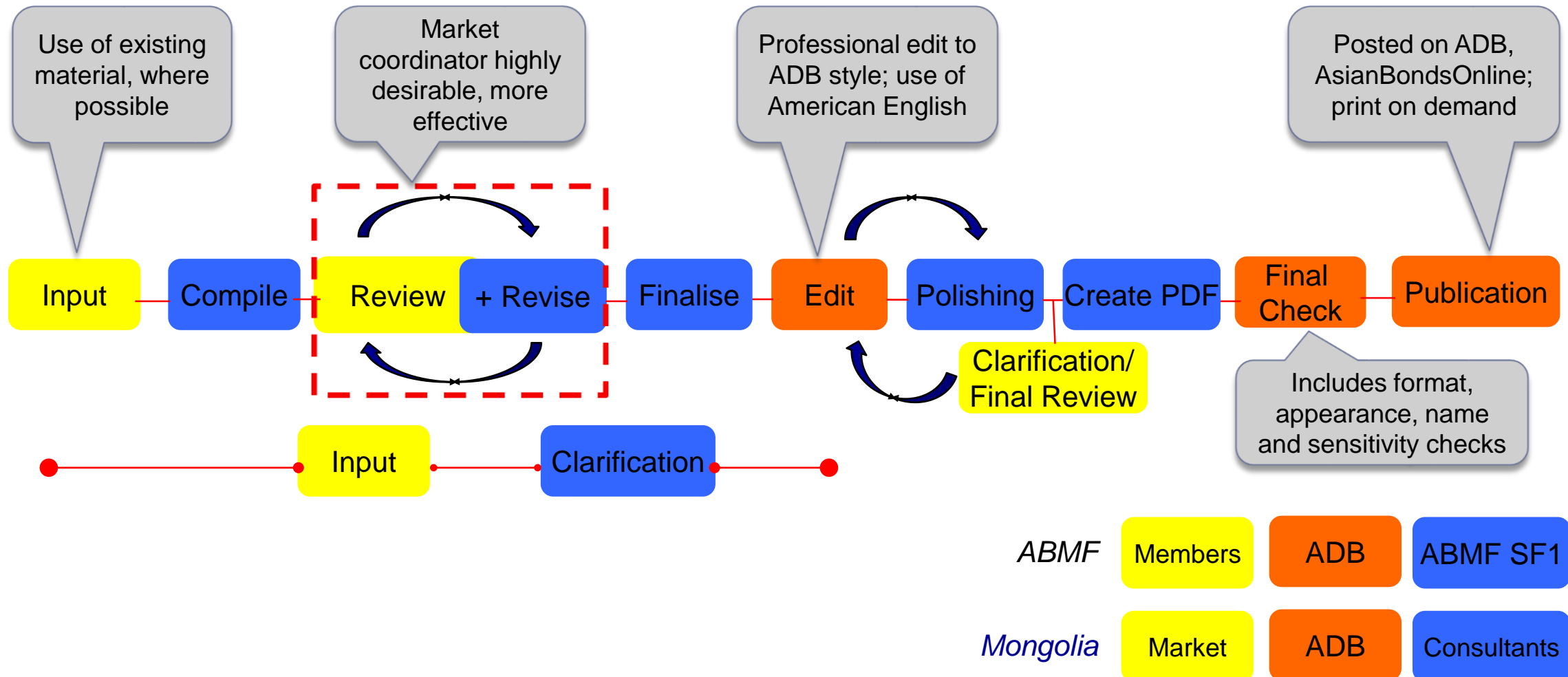


2017
ABMF BMG
Word Template
Developed



2018
ADB Flagship Series
Publication Established
Towards 14 Markets

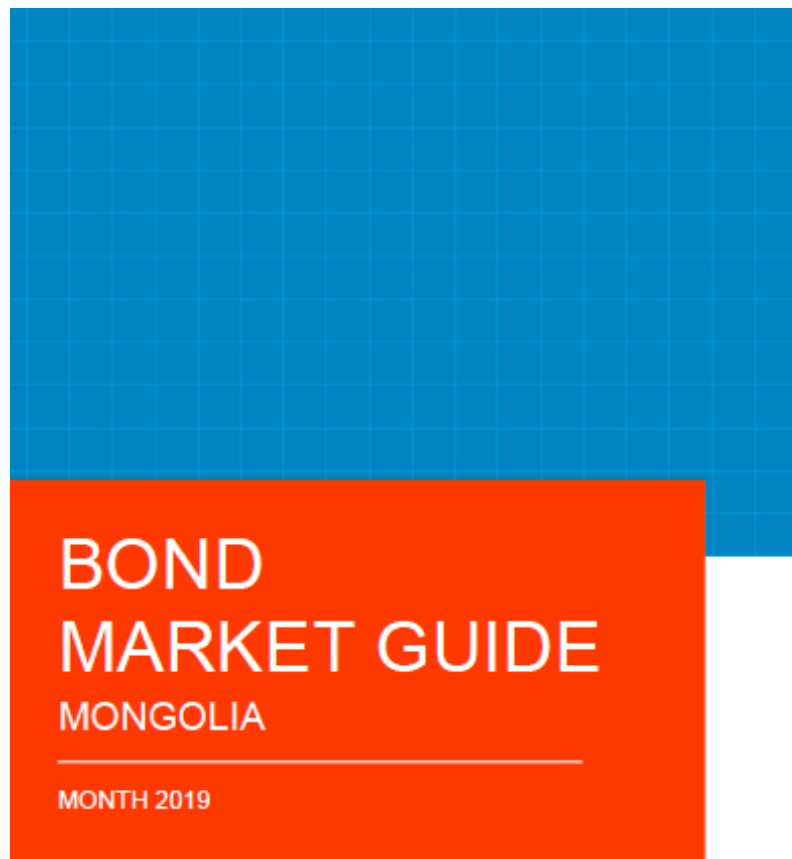
ASEAN+3 Bond Market Guides – Typical Workflow



ASEAN+3 Bond Market Guide – Features Explained

- Format and Style
 - Standard BMG template, normalised for ADB style
 - Chapter headers and footers will auto-configure
 - Automatic Table of Contents and Tables/Figures, if Word styles used
 - Only final version may need adjustment to chapter titles, formatting
 - No need for a layout specialist; just convert to PDF and publish
- Structure
 - Developed over 2 years of BMG creation, with reader, member feedback
 - Subjects selected on basis of investor, issuer feedback on, e.g., barriers
 - Supports readers picking specific topics via TOC, or reading cover to cover
 - Use of cross-references encouraged and practical

Mongolia Bond Market Guide



Latest BMG template (MS Word)
ADB style and formatting
37 pages, standard structure
Selected standard text
With guiding comments by SF1

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Suggestions for Mongolia Bond Market Guide (1)

- BMG template
 - Feel free to use BMG template provided
 - Standard BMG template, same style as last BMG published
 - Only mentions of ASEAN+3, ASEAN, ABMF removed
 - Table of Contents, headers, subjects adjusted to mention Mongolia
 - Generally, no need for a layout specialist/typesetter
- Structure
 - Same structure as last BMG published
 - SF1 included guiding commentary for each chapter, section
 - Some subjects may not have reportable information, but consider keeping structure to allow comparability with other BMGs published

Suggestions for Mongolia Bond Market Guide (2)

- General Recommendations

- Report facts only; contents needs to stand up to scrutiny by readers
- Avoid marketing statements and enhancing adjectives (“strong market”), since readers will hold market institutions to such statements...
- Level of detail largely determined by how much information is available
- Level of detail should, however, be reasonably consistent within the BMG

- Stakeholder Engagement

- Policy bodies and/or regulatory authorities need to review and ok contents
- It is important stakeholders are comfortable with the way they are presented
- Involve market institutions to both provide input and review draft
- Be mindful of individual stakeholders’ ability to commit to timelines

Suggestions for Mongolia Bond Market Guide (3)

- Chapter II, Legal and Regulatory Framework
 - Critical, since compliance and due diligence relevance
 - But also excellent conduit to review, assess market framework
 - Highlight the use of English versions of laws and regulations (if so)
 - Description of regulatory (approval) processes, details very important
- Chapter III, Market Characteristics
 - Description of instruments and issuance types, market features and participants
 - Information on governing law, investor protection, bankruptcy, default

Suggestions for Mongolia Bond Market Guide (4)

- Chapter IV, Trading and Trading Infrastructure
 - OTC and exchange bond market should be mentioned, regardless whether trading currently occurs only in one or the other
 - Information on bond market, e.g. pricing, yields, general info
- Chapter V, Settlement Infrastructure
 - For ASEAN+3 markets, reference to separate, very detailed ABMF report
 - Mongolia can consider using this chapter to project important information on its settlement infrastructure, settlement flows, standards used
- Chapter VI, Fees and Taxes
 - Fee information is critical because cost is a major decision making factor
 - Likewise, info on the types of taxes imposed and their application is critical

Suggestions for Mongolia Bond Market Guide (5)

- Chapter IX, Challenges and Opportunities
 - Chance to project market issues and their resolution
 - Indicates policy bodies', regulatory authorities' resolve and guidance
- Chapter X, Recent Developments and Future Direction
 - Chance to 'celebrate' past and recent achievements
 - Ability to introduce, detail roadmap and future plans
 - Gives readers the pointers to come back to, or monitor the market
- Appendix: provide list of laws, regulations for easy reference
- Glossary: important in particular to document market-specific terms and interpretations

Updates to (Mongolia) Bond Market Guide Once Published

- No predefined or committed update interval; practicality rules
- In the event of, e.g.
 - major market changes, including legal and regulatory framework
 - new market features, such as professional market
 - introduction of new products: e.g. repo, securities lending, derivatives
 - if statistics used for illustration are outdated
- Latest BMG template allows for quick turnaround
- But, requires commitment from market parties on input, review
- Need to schedule ADB resources (edit, publication)

Mongolia Bond Market – Next Steps

- ADB to meet market institutions, stakeholders
- Appointment of resources, selection of key contacts
- Determination of production timeframe, potential publication target
- Appointment of a market coordinator (facing ADB; recommended)
- Collection and review of existing market material
- Determination of what info is missing or should be included
- Research on and creation of missing material
- Compilation of Mongolia BMG

➤ Actual production steps see BMG workflow (slide 5)

Feedback & Thank You

We welcome any questions or feedback, even if today there may not be enough time.

Thank you in advance!

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