



Risk Data Aggregation

RISK CONSULTING

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December 2015



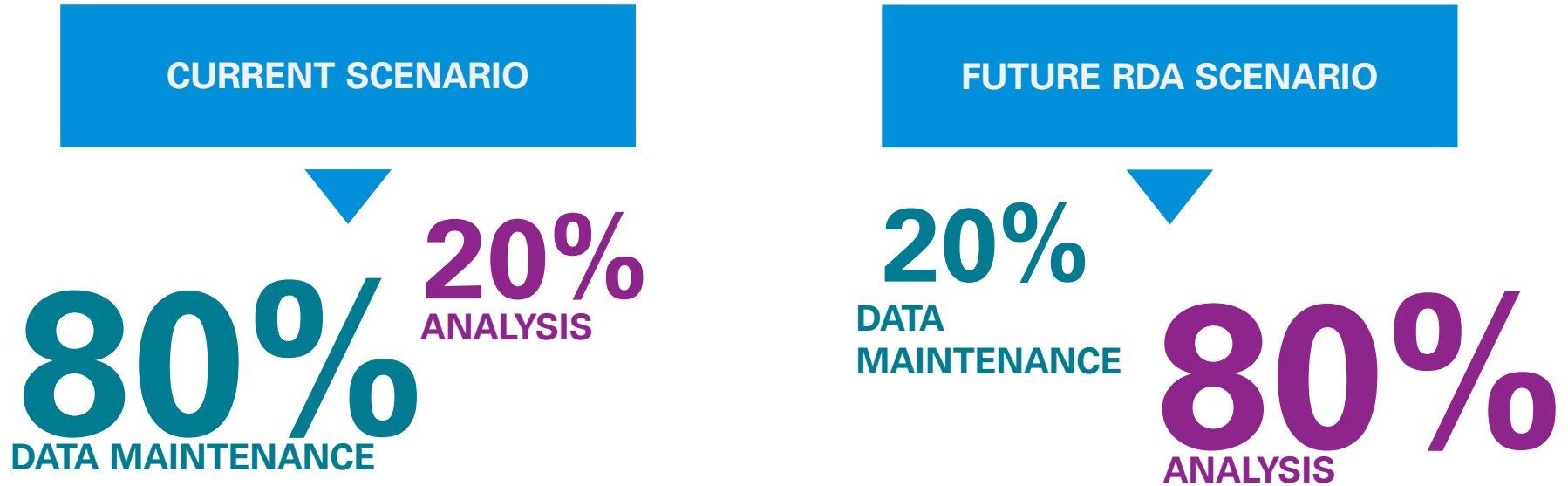
A regulatory matter...but not only

With multiple systems and incompatible data, risk professionals often spend too much time on data aggregation and reconciliation and too little time on the real analysis needed for risk management and strategic decision making.

RDA

Driver for change

Is there room for opportunity?



The ability to consolidate and synchronize all relevant Risk data can lay the foundation for a more comprehensive and consistent analysis, enabling better business Management, better Risk Management and improved operating models.

What's exactly RDA?

RISK DATA AGGREGATION

too obvious

REDEFINING DATA ARCHITECTURE

not your case

REINFORCING DATA ANALYTICS

warm

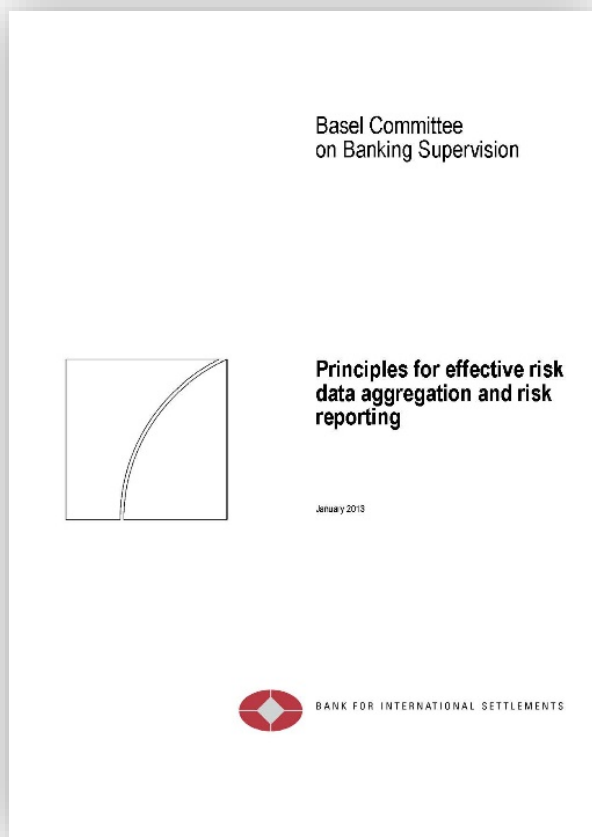
RDA

Thus...why now RDA?

“ The global financial crisis that began in 2007 revealed that the information technology (IT) and data architectures of many banks were incapable of supporting the aggregation of their risk exposures and the identification of concentrations quickly and accurately across multiple dimensions, such as the bank group level, across business lines and between legal entities. ”

“Some banks were unable to manage their risks properly because of weak Risk data aggregation capabilities and Risk reporting practices. This had severe consequences to the Banks themselves and to the stability of the financial system as a whole. ”

Principles



- Governance**
- Data architecture and IT infrastructure**
- Accuracy and Integrity**
- Completeness**
- Timeliness**
- Adaptability**
- Accuracy**
- Comprehensiveness**
- Clarity and usefulness**
- Frequency**
- Distribution**
- Review**
- Remedial actions and supervisory measures**
- Home/host cooperation**

Governance and Infrastructure

Risk Data Aggregation

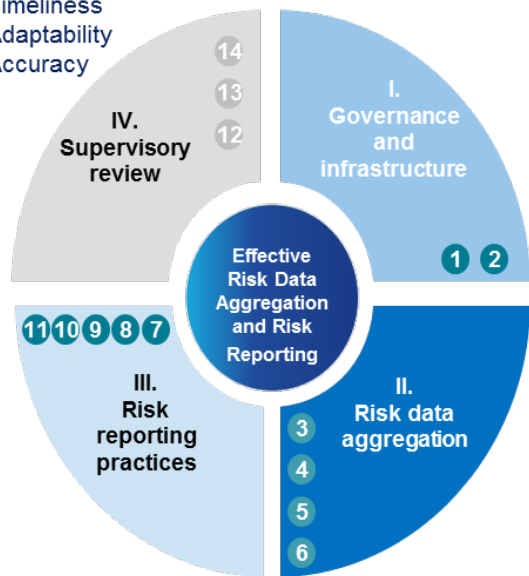
Risk Reporting Practices

Supervisory Review

Principles

14 Principles for data aggregation and risk reporting in BCBS 239

1. Governance
2. Data architecture & IT infrastructure
3. Accuracy and Integrity
4. Completeness
5. Timeliness
6. Adaptability
7. Accuracy



The principles translate into four key areas of impact

8. Comprehensiveness
9. Clarity and usefulness
10. Frequency
11. Distribution
12. Review
13. Remedial actions and supervisory measures
14. Home/host cooperation

A. IT architecture	
A1	Risk data models unified or automatically reconcilable across banking group with unified naming conventions
A2	Unified level of detail of data across the group to enable fully flexible reporting
A3	Risk and accounting data to be reconciled
A4	High degree of automation for risk data aggregation, manual steps as an exception only
A5	Strive for single source of risk data per risk type
B. Data Quality Framework	
B1	Effective data quality management including automated measurement methods and escalation procedures
B2	Comprehensive data governance for risk data including data owners from business and IT
B3	Documentation of reporting and reconciliation processes
B4	Automatic and manual quality checks in the reporting process
C. Risk Reporting	
C1	Adaptable and ad-hoc reporting capability with drill-down into various risk dimensions, stress testing
C2	Comprehensive, timely, dependable and adaptable risk reporting capability across all units and all material risks
D. Organisation and IT Management	
D1	Risk reporting and aggregation to be mapped into IT strategy / implementation roadmap
D2	Independent validation of standard compliance
D3	Full business continuity capability for risk reporting

Principles

Governance

RDA subject to strong governance arrangements consistent with other principles and guidance established by Basel Committee

Data architecture and IT infrastructure

Fully supports RDA capabilities and risk reporting practices also in times of stress

Governance and Infrastructure

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Principles

Accuracy and Integrity

Be able to generate accurate and reliable risk data to meet normal and also stress reporting accuracy requirements with minimum probability of error

Completeness

Be able to capture and aggregate all material risk data across the whole banking group in sufficient detail to identify risk exposures, concentrations and emerging risks

Timeliness

Be able to generate up-to-date risk data in a timely manner in normal and stress situations while also meeting requirements of other principles

Adaptability

Be able to generate risk data to meet a broad range of on-demand and ad-hoc internal and supervisory requests also in stress situations

Governance and Infrastructure

Risk Data Aggregation

Risk Reporting Practices

Supervisory Review

Principles

Accuracy

Reports should be reconciled, validated and accurately and precisely convey risk data and reflect risk in an exact manner.

Comprehensiveness

Reports should cover all material risk areas within the organisation according to the size and complexity of its operations and risk profile

Clarity and usefulness

Reports should communicate information in a clear and concise manner, facilitate informed decision-making and tailored to the needs of the recipients

Frequency

Frequency of report production and distribution should reflect the needs of the recipients, the nature of the risk reported and contribute to sound risk management and decision making

Distribution

Reports should be distributed to the relevant parties while ensuring confidentiality is maintained

Governance and Infrastructure

Risk Data Aggregation

Risk Reporting Practices

Supervisory Review

Principles

Review

Supervisors should periodically review and evaluate a bank's compliance with the eleven Principles above

Remedial actions and supervisory measures

Supervisors should have and use appropriate tools and resources to require effective and timely remedial action in case of non-compliance

Home/host cooperation

Supervisors should cooperate with relevant supervisors in other jurisdictions regarding the supervision and review of the Principles

Governance and Infrastructure

Risk Data Aggregation

Risk Reporting Practices

Supervisory Review

What is this really all about?

“The term “risk data aggregation” means defining, gathering and processing risk data according to the bank’s risk reporting requirements to **enable the bank to measure its performance against its risk tolerance/appetite**. This includes sorting, merging or breaking down sets of data.”

January 1st, 2016

2013



1st European Banks Self Assessment Questionnaire

RESULTS OF G-SIB Banks to Questionnaire

- a. Principles related to risk reporting practices scored better than Principles related to governance and infrastructure and risk data aggregation capabilities.
- b. The three Principles with the lowest reported compliance: Data Architecture and IT Infrastructure, Accuracy and Integrity and Adaptability.
- c. Reporting Principles, rated higher than those related to governance/infrastructure.

CONCLUSIONS BY BCBS ON 1st SELF ASSESSMENT

1. Banks are facing difficulties in establishing strong data aggregation governance, architecture and processes.
2. Over reliance on manual workarounds impairs among bank's Risk data aggregation and reporting
3. A number of G-SIBs expressed their inability to not fully comply with at least one Principle by January 1, 2016
4. Supervisors should enhance their efforts to test bank's capabilities to aggregate and produce reports in stress/crisis situations

2014

2013

2014

2015

Client Strategic Plan & Roadmap

Client's CONCLUSIONS

1. Reliable and complete reporting information although with numerous manual adjustments from the analyst
2. Reporting in a highly manual environment
3. Unique and centralized sources for each risk do not exist, but initiatives have been set in place
4. Validation and control must be strengthened
5. Review and organize channels and sources of information under a defined governance framework

2015



RESULTS OF G-SIB Banks to Questionnaire

- a. Banks continue to encounter difficulties in establishing strong data aggregation governance, architecture and processes
- b. Firms fail to recognize that governance/infrastructure Principles are important prerequisites for facilitating compliance with the other Principles
- c. Compliance with data architecture/IT Infrastructure was rated lowest while report/distribution was rated highest

2nd European Banks Self Assessment Questionnaire

CONCLUSIONS BY BCBS ON 2nd SELF ASSESSMENT

1. Compliance dates may be overly ambitious and it will be difficult for a number of firms to fully comply with the principles by January 2016
2. Need for continued supervisory oversight of G-SIB's progress in closing gaps with the aim of fully complying with the principles.
3. Need to fully engage Senior Management as well as board of Directors
4. Exhaustive monitoring by supervisors on progress regarding IT architecture projects, minimizing the use of manual systems and setting quality controls

Conclusions

1st Assessment
2013

VS

2nd Assessment
2015

CONCLUSIONS

1. Lower Average performance
2. Additional entities manifested their inability to comply with the January 1st, 2016 compliance date

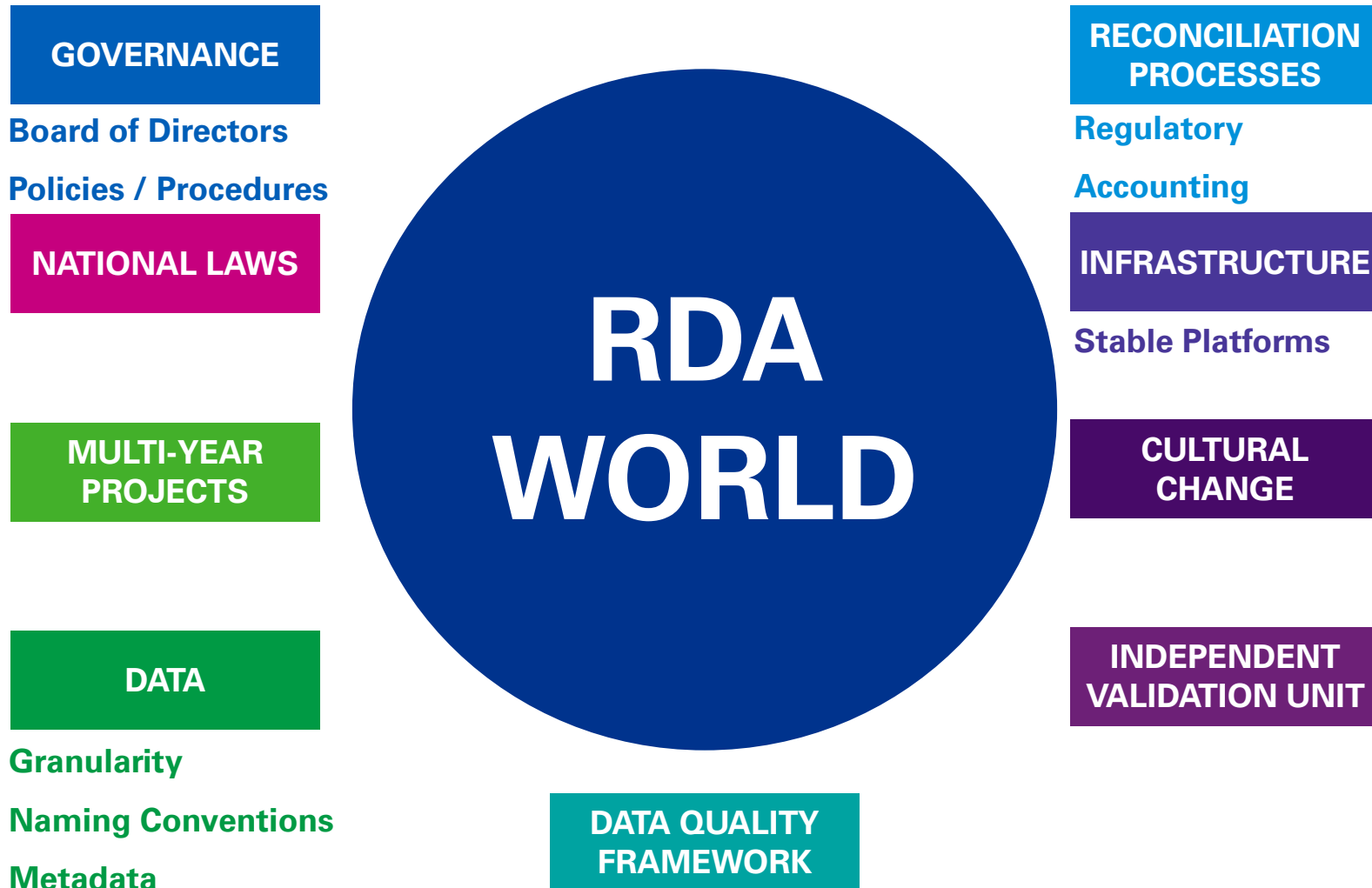
As entities are digging deeper into their own Risk Information, the GAP with RDA principles widens

Conclusions by BCBS

4 KEY ISSUES TO ADDRESS:

1. **Inefficient:** data often resides in different silos, owned by different functions (such as trading desks, market groups, risk control, finance, or back-office), all with different approaches and incentives to data aggregation
2. **Inflexible:** ability to react quickly to market events in terms of preparing scenario analyses and reports that are not contained in standard operating procedures. It is also necessary to have the flexibility to react rapidly to regulators' requests for reports and data without an immense amount of manual work.
3. **Quality:** Since banks tend to have multiple, discrete systems, the quality of data is degraded by incompatible definitions, inconsistency, incompleteness, and duplication.
4. **Governance:** too often, ownership of risk data is shuffled between the control function and the IT function, with senior management taking little direct responsibility

What are the upcoming challenges?



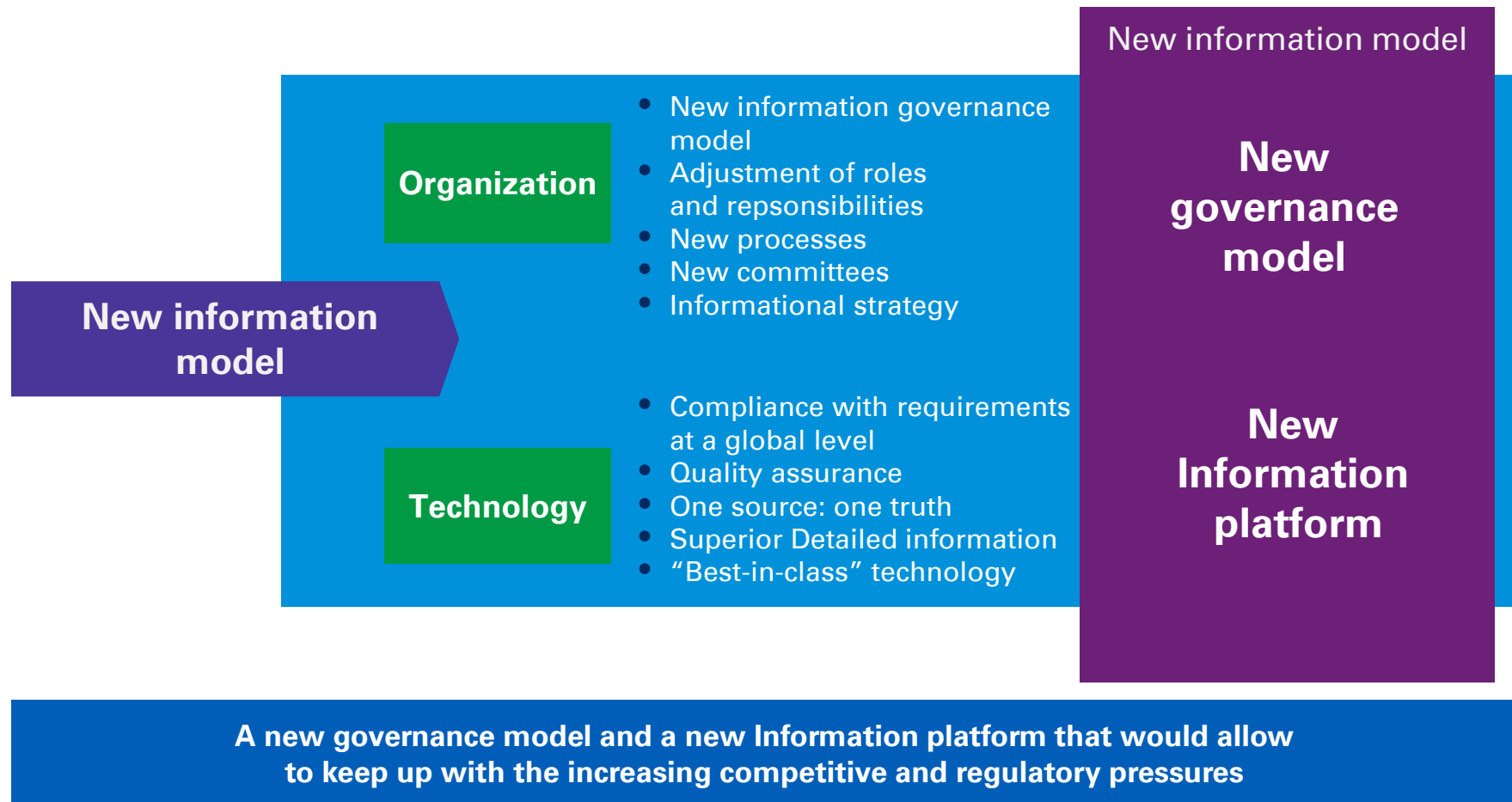
Supervision approach

The BCBS is contemplating the following steps in order to supervise the different bank's approaches:

- Establishment of solid internal Governance frameworks to involve both the highest management team (Board of Directors) as well as the day-to-day operations team
- Conducting a self-assessment survey of the banks in a reduced form and a thematic review of the requirements with the lowest scores
- Requiring that the banks stress test their ability to complete a risk data aggregation template within a limited time.
- Strong references all along MUS regarding SREP
- Growing emphasis of supervisors on the quality and accuracy of reported data and other information

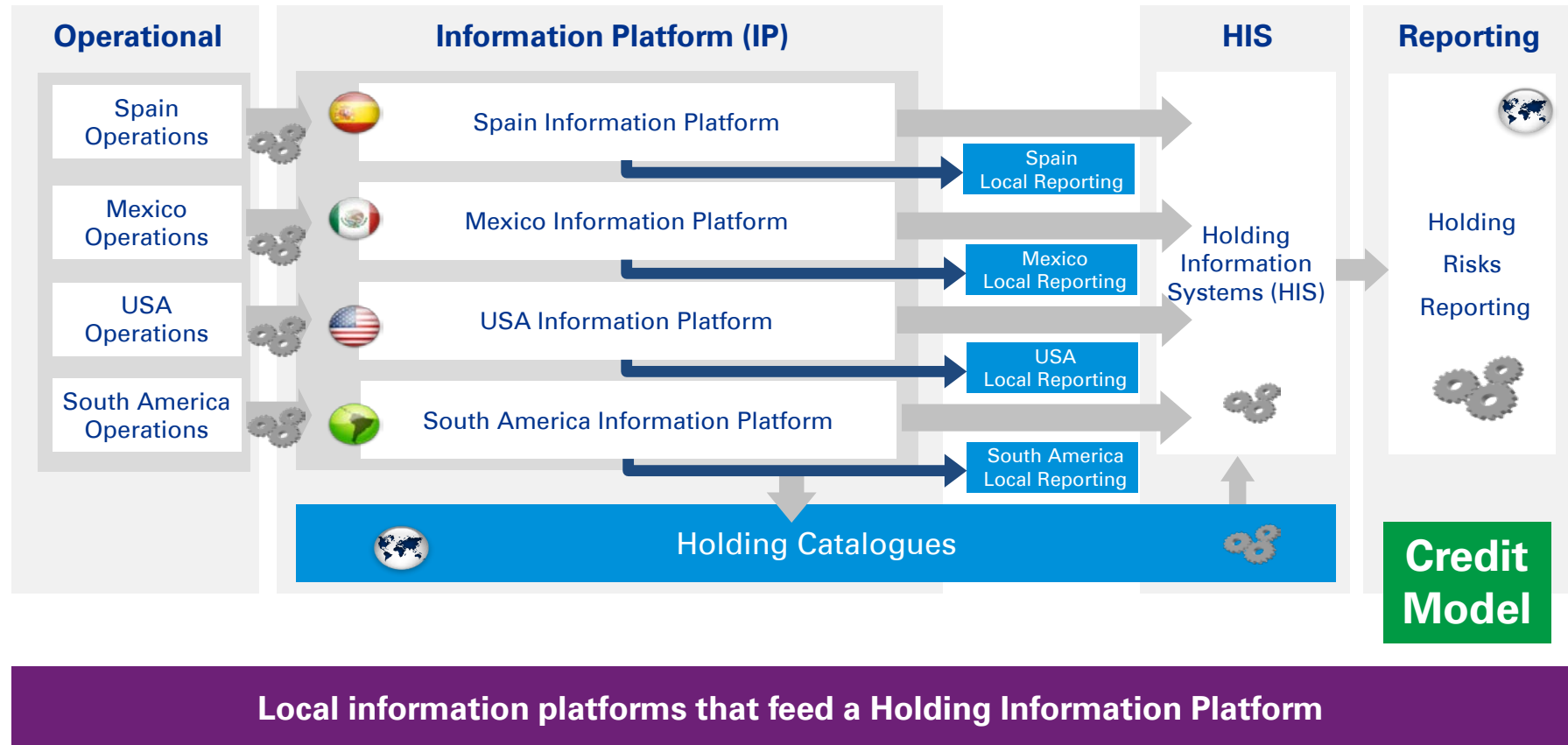
A client case: a long journey travelled...

The transformation process revolves around two key aspects: **Organization and Technology**



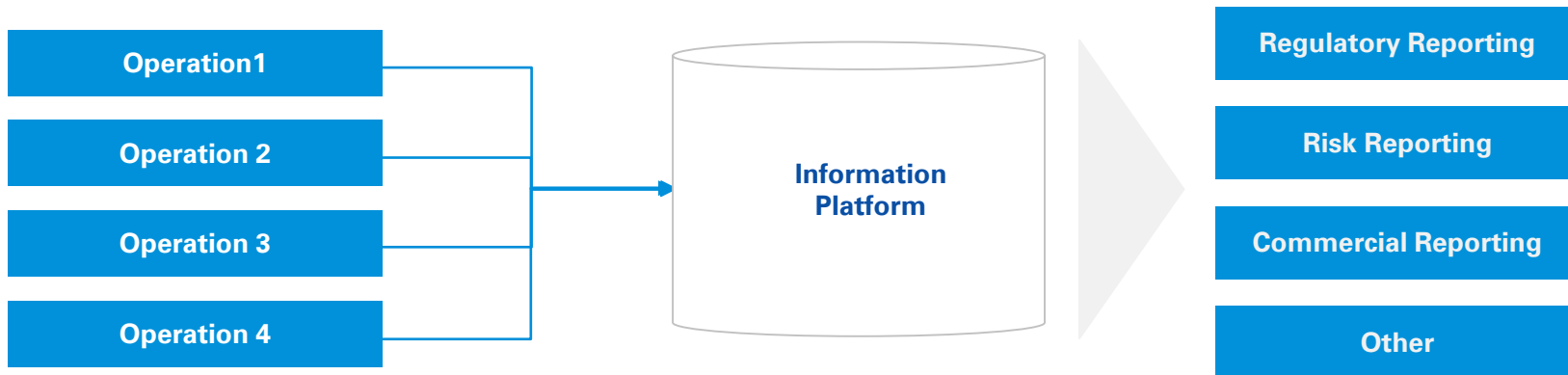
A client case: a long journey travelled...

The implementation of local and Holding platforms is managed at a technological level.

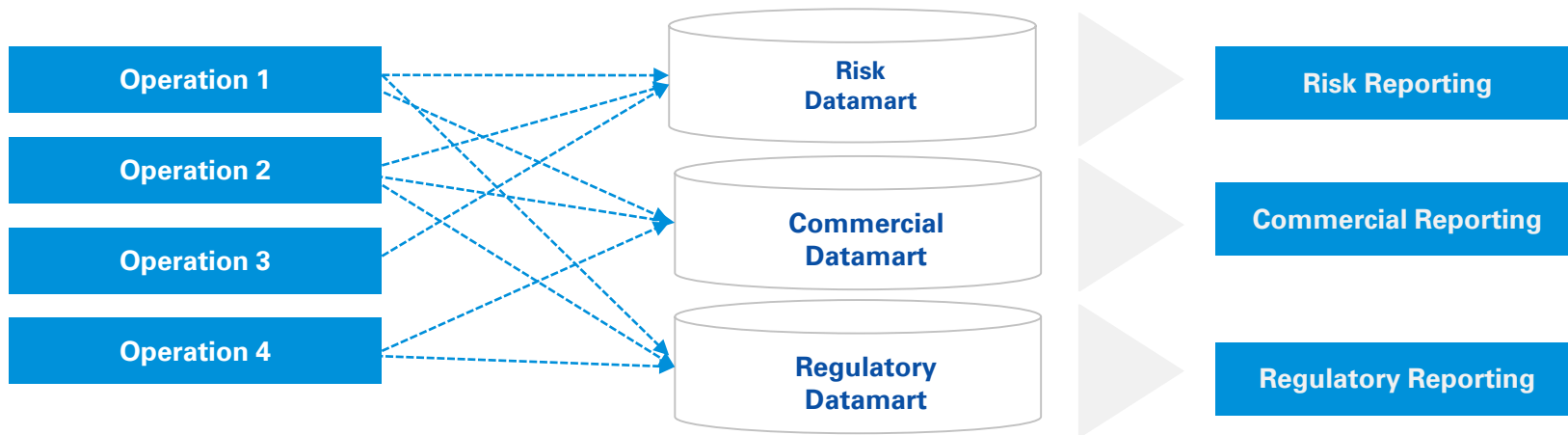


A client case: a long journey travelled...

CLIENT MODEL



OTHER MODELS

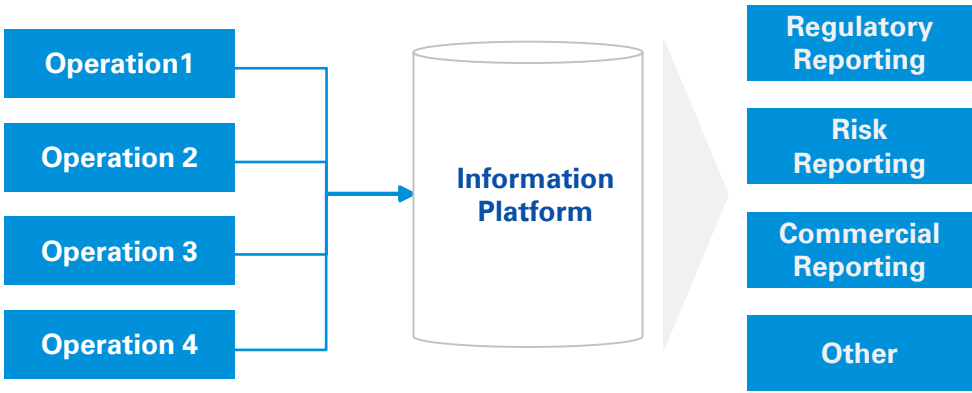


A client case: a long journey travelled...

CLIENT MODEL



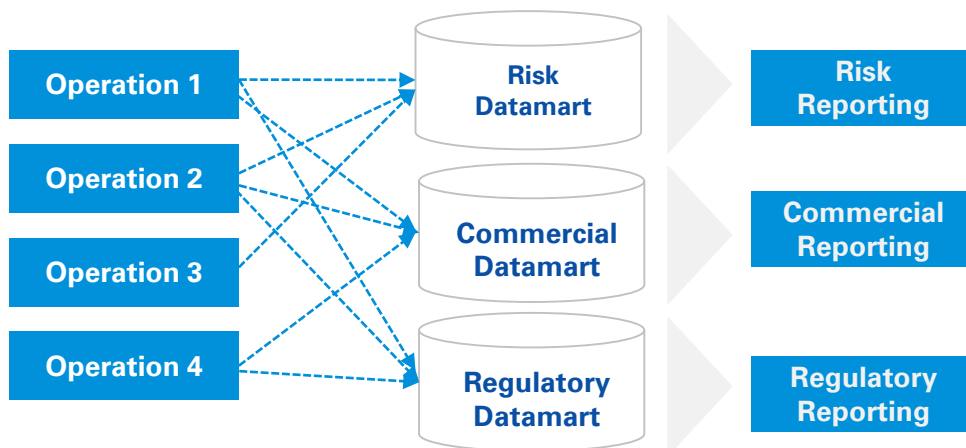
Advantages



- Single input channel
- Centralized information in a single corporate DWH
- Rationalization of output
- Client global vision, therefore, risk vision
- Coordination of different views (risk, commercial, etc.) with the accounting view
- Capacity for generating control layers and improvements in the usability of information
- Infrastructure efficiency

A client case: a long journey travelled...

OTHER MODELS

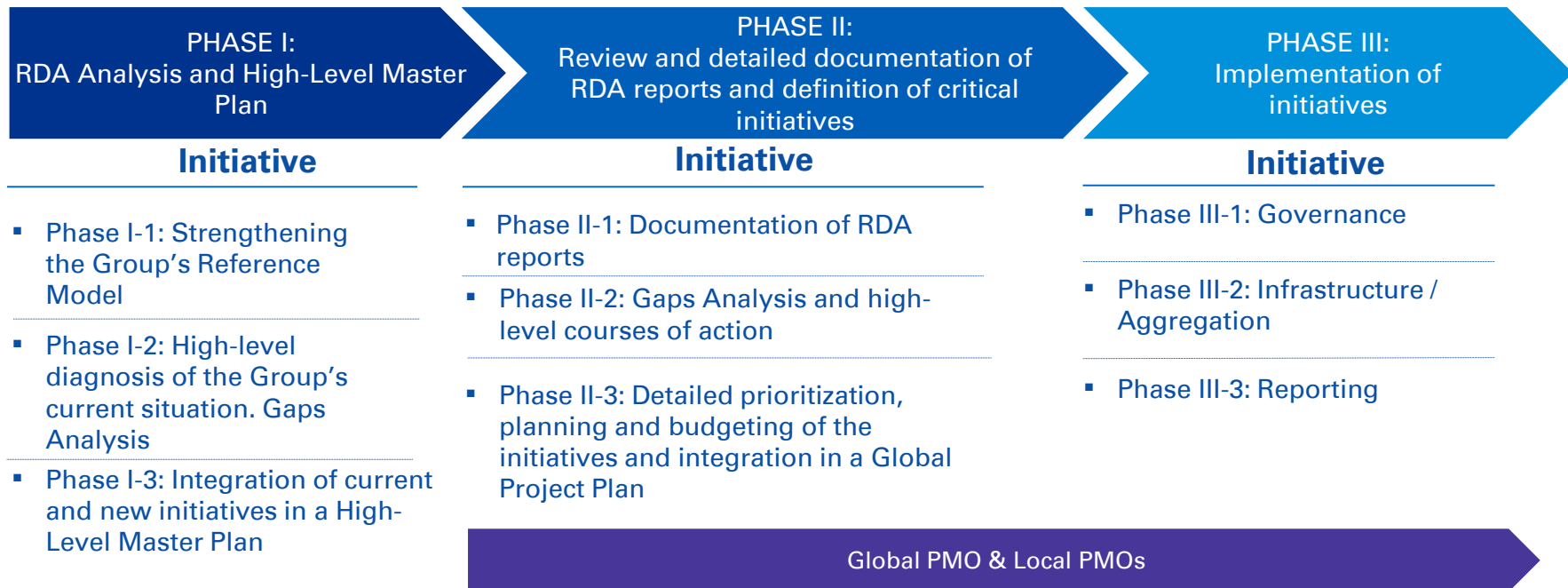


Disadvantages

- Scattered and divided infrastructures
- Different input channels
- Several information transmission channels for each infrastructure
- Slower reaction to generate outputs when including information not found in the datamarts in attempt to ensure:
 - Data uniqueness and traceability
 - Unique and efficient controls given the lack of centralization
 - Data governance and unique and centralized data definition

A client case: a long journey travelled...

RDA Project



...but still a long journey ahead

Closing the gap (1S 2015)

- Share an update on RDA plan with JST
- Continue rolling out projects underway
- Coordinate with local RDA plans to ensure consistency and timings

Enhancing (2S 2015)

- Implementation of new initiatives to be materially compliant in terms of RDA
- Fully document and subject to high standards of validation the aforementioned initiatives

Full compliance (2016)

1. End medium term strategic initiatives converging to the RDA solution
2. Increase accuracy and integrity (reconcile pending figures ensuring local and consolidate reporting)
3. Further efforts in terms of higher degree of automatization

**Progressive implementation of initiatives converging to the RDA solution.
Higher degree of automatization and increase accuracy and integrity**

Key Takeaways

A regulatory matter, but not only

Many clients intensively started an information technology and data architectures transformation to support the broad management of financial risks years ago

Main efforts reside both in enhancing the infrastructure for reporting key information and improving decision-making processes throughout the organization

A successful transformation of risk data aggregation and management requires a considerable investment of time and resources



Thank you



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