

Enterprise Risk Management: Time for Data Excellence

Initiating a strategic response to the new Basel requirements on risk data
aggregation and risk reporting – Basel Committee on Banking Supervision 239,
January 2013

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Executive Overview

There is no doubt that the new requirements issued in January 2013 by the Basel Committee¹ will be a game changer for many financial institutions across the globe. As outlined by the Committee, one of the biggest lessons of the global financial crisis that started in 2007 is the need to radically improve a bank's data capabilities and architecture in the area of risk management, thus enabling all stakeholders to get a clear and comprehensive view of the bank's global risk exposure.

These requirements are not only a new set of obligations for banks, but are also a tremendous opportunity for major banks to either start new programmes or strengthen existing initiatives to address shortcomings in the area of risk data management. The precise steps for such projects will differ from bank to bank, but the target should be the same: establishing a single source of truth for risk management, that all can trust and rely on.

Of course, implementing such a transformation is no small task, and might even initially look to be an overbearing burden for many institutions. The good news, however, is that such programmes have already been initiated in a number of banks, and implemented to various degrees of completeness; this will have produced valuable knowledge and experience in this area. Whether they are planning to finalise their own existing risk data transformation or are initiating a new one from the very start, banks should leverage on existing best practices and proven solutions rather than undertake the long transformation journey on their own.

¹ BCBS 239 - Principles for effective risk data aggregation and risk reporting, Basel Committee, Jan 2013

Basel's Call for Action – The 14 Principles

As stated by the Basel Committee, the financial crisis uncovered the fact that “many banks lacked the ability to aggregate risk exposures and identify concentrations quickly and accurately at the bank’s group level.”² To remedy this problem, it has laid out 14 principles to ensure effective risk data aggregation and risk reporting. These two elements – risk data aggregation and risk reporting– are of course intertwined. The aims of these principles are the risk reporting capabilities, to achieve a comprehensive view of the bank’s risk exposures, whilst the means to achieve this goal resides in global, aggregated risk data management.

Given the task at hand, the timeline set out by the Basel Committee is quite ambitious. Global Systemically Important Banks (G-SIBs) will be required to reach full compliance with these Principles by January 2016³. Furthermore, to ensure that the roadmap to compliance starts now, the Committee also requires banks to provide a compliance self-assessment to their local supervisors starting as soon as early 2013.

The 14 Principles laid out by the Basel Committee are summarised Figure 1 below.



Figure 1. Summary of the 14 Principles for Risk Data Aggregation and Risk Reporting.

² BCBS 239 – §1, page1.

³ The Basel Committee strongly encourages national supervisors to apply the same principles to Domestic Systemically Important Banks as well, with a 3 year deadline to comply after their designation as D-SIBs

Governance and Architecture

The first set of principles, regarding data governance and global IT architecture, make it clear that the Committee advocates a top-down approach with projects sponsored by the bank's board members and senior executives. IT infrastructure and data architecture should be the reflection of this commitment at the highest level.

Risk Data Aggregation

The second set of principles outlines the main features of a strong and reliable risk data management framework. Accuracy and integrity of the data are of utmost importance, and to achieve this, “a bank should strive towards a single authoritative source for risk data per each type of risk” (§36 d). Completeness of data is the next step to achieve an enterprise-wide view of risk data, and it applies to all the relevant risk dimensions (counterparty, geography, legal entity, etc.). Furthermore, timeliness of data is a pre-requisite for the data to be of any use to the stakeholders, both in normal times and in times of crisis, while the principle of “adaptability” of data (Principle 6) enables the bank's risk management function to take any preemptive action or react quickly to new and potentially unexpected situations.

Risk Reporting

The third set of principles leverage this data foundation to bring “accurate, clear and complete” risk reports to the bank's decision makers.

- The accuracy of reports principle, while being quite self-evident, highlights the difficulties often met by a bank to generate reliable, “reconciled and validated” risk reports
- The comprehensiveness of reports principle ensures that no risk area is left uncovered, which would create an uncontrolled hazard.
- The complementary principle of clarity and usefulness establishes the necessity to present the information in a way that can be realistically processed by decision makers.
- The last two principles of frequency and distribution focus on the reporting needs of the end-users, who should be given access to reports depending on their business needs in a secure and targeted manner.

Supervisory Review

The fourth and last set of principles relates to supervisory review and is addressed to the regulatory authorities rather than banks. It sets out the general conditions under which the review of Principles 1-11 should be conducted and defines the framework for the potential regulatory corrective action. Being primarily targeted at local supervisors, these last 3 principles are not addressed in detail here, although we believe that the offer presented in the next section will also facilitate the ongoing dialogue between the bank and regulatory authorities.

Achieving Effective Compliance with Oracle

Oracle can help your organization by bringing to you the right set of solutions needed to comply with these new requirements. Again, these requirements are not only a new obligation but also a great opportunity to put in place a stronger, more reliable, repeatable and comprehensive risk data management framework.

Oracle Financial Services Analytical Applications' (OFSAA) unified platform (Figure 2) is at the foundation of such a strategic response. Its three components – the Oracle Financial Services Data Foundation, the framework and the highly configurable, pre-built Risk Reporting package – offer the solution set needed to comprehensively address the compliance challenges detailed above.

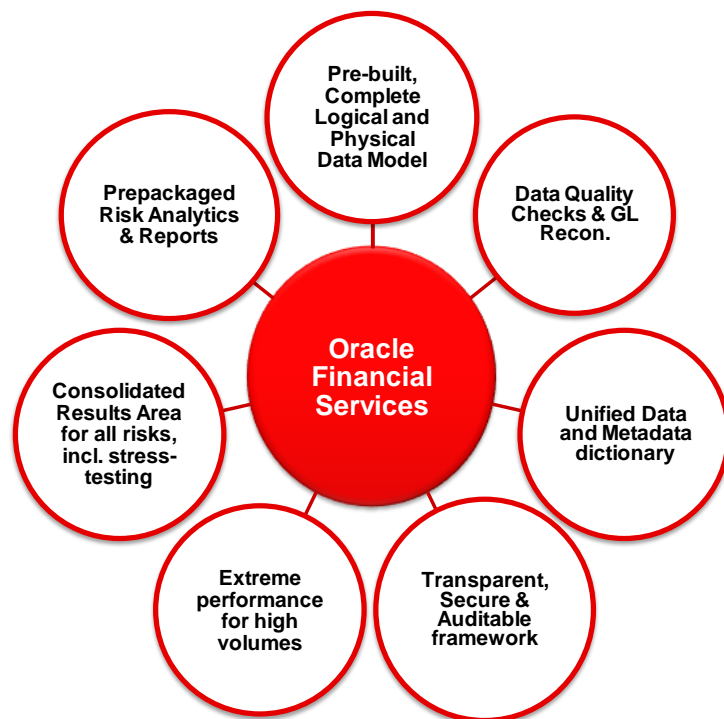


Figure 2: Strategic response to the 14 Principles with OFSAA's unified platform

Pre-built, Complete Logical and Physical Data Model

It all starts with the data model: the foundation of the unified platform consists of a unique Financial Services data model and data management framework that is both complete and ready to use. Built from years of experience in the field of risk applications, the physical data model covers all the areas of a bank's risk management needs, thus truly enabling a bank to establish a "single source of truth" for risk data. It covers critical risks identified by the Basel Committee, such as credit exposures (including derivatives), trading exposures and positions, liquidity risk and operational risk factors. The Financial Services data model allows institutions to capture data at the most granular level and provides detailed definitions for a comprehensive set of banking book and trading book instruments. Combined with its customisation possibilities, this naturally ensures full compliance with Principle 6 on adaptability. The

data model also contains detailed structures for reference data related to customer, product and organization⁴ among other dimensions. In line with Principle 2, this enables the unified platform to “fully support [the bank’s] risk data aggregation capabilities and risk reporting practices”.

Data Quality Checks and GL Reconciliation

In line with Principle 3, the unified platform offers two major components to ensure the accuracy and integrity of risk data. First, a data quality framework enables the bank to ensure the quality of the input data in a systematic manner by putting in place the robust controls requested by the Basel Committee. For this, banks can define their own data quality checks or rely on thousands of pre-configured checks. Second, a dedicated GL reconciliation module ensures that risk data is “reconciled with bank’s sources, including accounting data [...]” (§36c). By jointly using these two tools, the bank acquires the capability to “measure and monitor the accuracy of data” (§40).

Unified Data and Metadata Dictionary

One of the implications of Principles 2 and 3 is the need for full documentation, implying a unified data and metadata dictionary. Consistent with these principles, the unified platform integrates a full data dictionary that serves common data definitions across the bank. Furthermore, a unified metadata management framework ensures that “integrated data taxonomies” (§33) are implemented throughout the bank. In accordance with Principle 1, it also ensures the data model is readily “fully documented and subject to high standards of validation” (§29a).

Transparent, secure and auditable framework

The platform provides a complete, transparent, secure and auditable framework. All data transformations and risk calculations are fully documented through the metadata management framework, as requested in Principle 1. The transformations and calculations are completely traceable and auditable, in such a way that all data movements happen in a transparent manner. Moreover, the framework implements role-based security, which means users are given access to data segments and functions depending on their roles, responsibilities and business needs. Manual adjustments are effected in a controlled manner with the usage of four-eye validation. This is in accordance with Principle 2 that elaborates on the “roles and responsibilities” to be “established as they relate to the ownership and quality of risk data” (§34) as well as Principle 11 pertaining to the relevant distribution and confidentiality of risk reports.

⁴ As an example, the data model’s flexibility and comprehensiveness, along with strong reference data management capabilities, allow the seamless utilization of the Legal Entity Identifier system currently being finalised at the initiative of the Financial Stability Board.

Extreme Performance for High Volumes

The Oracle Exadata Database Machine is an easy to deploy solution for hosting the Oracle database that delivers the highest levels of performance available. Used in conjunction with the unified platform, the solution delivers extreme performance for high data volumes (customers, exposures, transactions, etc.) such as those handled by Tier-1 international banks. This is a crucial component of the overall solution as it ensures that risk data is not only stored but made available to stakeholders in the most rapid manner, throughout the bank and for all risk areas. This is in line with Principle 5, which states that “a bank should be able to generate aggregate and up-to-date risk data in a timely manner”, both under normal circumstances and in times of stress. This is no small aspect of the overall picture: in times of market duress (liquidity crisis or other) the speed at which banks will assess their global risk exposures can potentially make the difference between the ones that succeed and those that fail. Extreme performance allows banks to understand their business better and therefore enhance the speed to decision-making.

Consolidated Results Area for all Risks, including Stress-Testing

The unified platform features a physical, readily available results area that consolidates the information available for risk reporting throughout the bank and for all critical risks. As per Principle 4, this enables the bank to “capture and aggregate all material risk data across the banking group”. The results area makes data available for all the dimensions defined by the bank (business line, legal entity, asset type, etc.) and enables drill-down to the most granular level. Leveraging on years of experience in the field of risk applications, the framework and results area fully support “stress testing and scenario analyses” (Principle 6) as well as forward-looking forecasts. As per Principle 6, the results area natively includes subject areas such as “capital adequacy, regulatory capital, capital and liquidity ratio projections, credit risk, market risk, operational risk, liquidity risk, stress testing results, inter- and intra-risk concentrations, and funding positions and plans” (§59). It offers a comprehensive, aggregated view of the bank’s risk data and makes it readily available to the pre-packaged risk reports.

Pre-Packaged Risk Analytics and Reports

The Basel requirements pertaining to risk reporting are fully covered through a set of pre-packaged analytics, directly plugged into the results area. As per Principle 7, the direct link between the results area and the suite of reports ensures accuracy as the reports are natively based on “reconciled and validated” data. The reporting layer’s functional coverage offered by the suite of reports ensures comprehensiveness as per Principle 8, covering all critical risk areas. Based on Oracle Business Intelligence technology, the pre-packaged suite of dashboards and reports greatly improves the user experience as they present useful and significant information in an easy to understand manner – thus covering the requirements laid out in Principle 9. The reporting layer offers extensive distribution capabilities to ensure that reports are delivered to the specific users, in the way that is most relevant to them (web portal, e-mail, iPad, iPhone, etc.) and at such frequency as is needed by the market situation (Principle 10). Leveraging on role-based security, the reporting layer allows “reports [to] be distributed to the relevant parties while ensuring confidentiality is maintained” (Principle 11). Board or senior-level Powerpoint presentations can be refreshed automatically with updated results for greater efficiency and speed of delivery.

The unified platform has been designed from the outset to support and address usage of data by business-oriented solutions. This was achieved by starting with the end state, going from the desired use cases and reports all the way back to the risk data model, thus ensuring the solution would bring “accurate, clear and complete” business information to the end users.

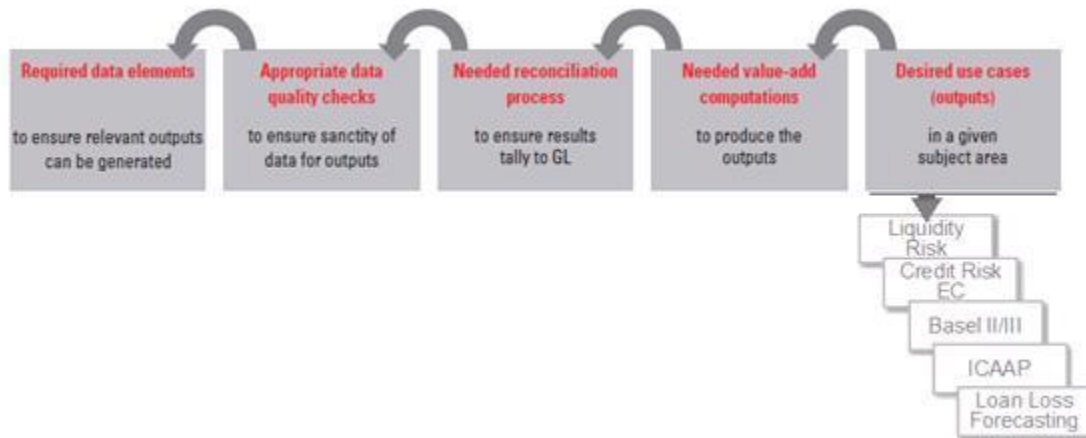


Figure 3: Business before technology: Beginning with the end in mind

Beyond Compliance: Gaining Competitive Advantage through Risk Data Excellence

The unified platform will set your bank on the path to compliance with the new Basel requirements on risk data aggregation and risk reporting. Furthermore, it is the first step to streamline and improve your risk management framework. Three aspects have to be considered:

- From a functional risk management perspective, OFSAA offers a full set of risk management applications directly integrated with the unified platform.
- From a technical point of view, Oracle offers best of breed tools that can help you address IT infrastructure issues such as data sourcing, volumes, scalability, etc.
- From a re-use point of view, the platform is built utilising open standards technology, so the bank has the option to choose Oracle integrated applications or continue using their existing calculation engines, internal or third party models, as those can all be hosted within the framework.

Streamlining your Risk Management Framework with Oracle Financial Services

Oracle offers a clear alternative to either a tactical, short-term solution or a wholesale replacement. Banks can take an evolutionary approach aligned to their compliance priorities and wider business objectives. This solution, which addresses pressing compliance issues, is based on a common data model, infrastructure and business intelligence layer. These common building blocks ensure data consistency, traceability and availability across any application running in this environment (Figure 4).

They also extend the return on investment of existing software investments, accommodating high-value assets within the target Oracle environment.

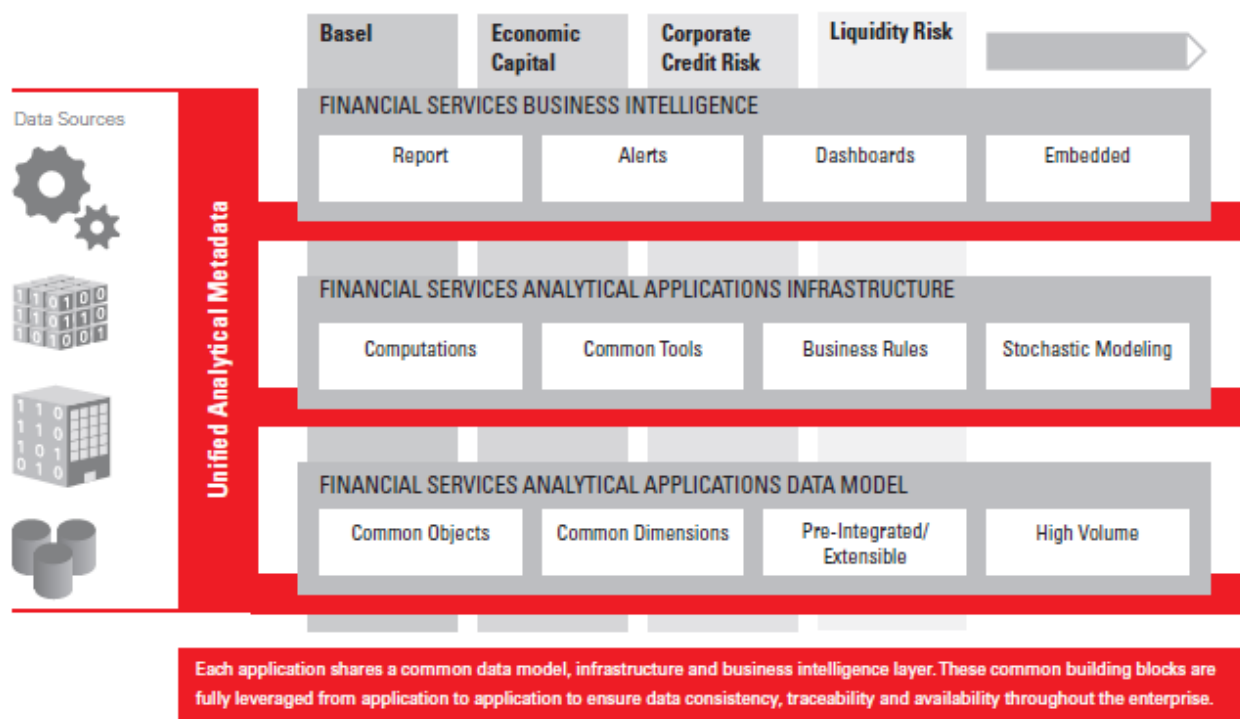


Figure 4: Using a shared data model, infrastructure and business intelligence layer across multiple risk activities

Oracle Financial Services Analytical Applications (OFSAA) leverages this architecture to provide dedicated risk applications in the fields of credit risk, market risk, regulatory and economic capital, liquidity risk, operational risk, etc. All the applications work seamlessly on the unified platform, taking input from the staging area and delivering output to the results area for direct consumption by the reporting layer with its hundreds of pre-built risk reports. Being based on the common platform, they allow the bank to define a roadmap with clear and achievable milestones. The offer being completely modular, these milestones are defined based on the bank's priorities and can be adapted and modified depending on evolving market conditions and regulatory context. As an example, a bank could choose to implement the unified platform first to answer the immediate compliance challenge, then look at a Liquidity Risk Management programme leveraging on the same platform, then assess the potential replacement of the Basel Regulatory Capital solution for risk weighted assets and regulatory capital computations, before integrating these elements into the global ICAAP framework.

This framework is completely open, so banks can integrate the unified platform not only with native Oracle risk applications, but also with external engines – either in-house developments or third-party solutions – as illustrated in Figure 5.

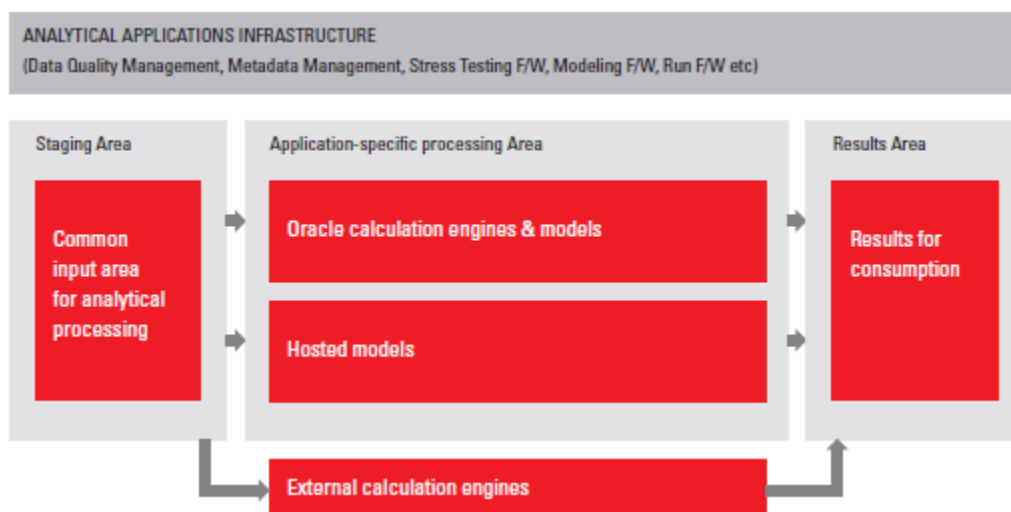


Figure 5: Interaction with external engines and hosted models

Leveraging on the Oracle Stack to Reach Risk Data Management Excellence

Furthermore, Oracle offers a variety of tools to enable true data management excellence and helps you make the best of the unified platform. Figure 6 below summarises how Oracle solutions can help you improve the whole risk data management process, from data sourcing to data reporting.

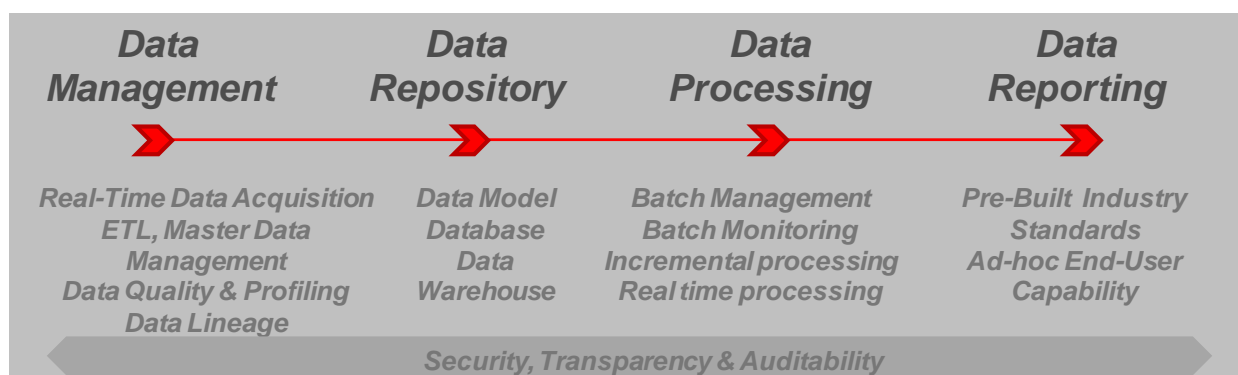


Figure 6: Leveraging the Oracle stack for end-to-end Risk Data Management

Oracle can help you in each step of your data management process with solutions that enable an evolutionary and modular roadmap toward risk data excellence. Such initiatives should in no way be planned as “big bang” projects but on the contrary need to be phased in clear and reachable milestones, enabling the bank to monitor progress on a regular basis. While the regulatory deadlines naturally suggest that solutions such as the unified platform – potentially combined with Oracle’s engineered system Exadata for extreme performance – should be the starting point of such an initiative, the possibilities offered by the use of complementary tools for data sourcing, master data

management and complex event processing among others should be borne in mind from the very start of the project.

Conclusion

The 14 Principles laid out by the Basel Committee are addressing an important and pressing point: most banks have been facing data and reporting issues that have prevented them from achieving a comprehensive view of their risk exposures. Whether these problems originate in the proliferation of silo'd systems or in the sheer complexity of the business organisation, the target should be the same: building a single source of truth for risk data that is accurate, clear and complete. It should also be reconciled with finance data so all stakeholders in the bank can rely on figures and reports derived from it.

The new requirements are a great opportunity for banks to improve and streamline their approach to risk data management. The benefits from streamlining risk data sourcing and processing go far beyond regulatory compliance: the implementation of a single, transparent and auditable framework will help banks manage their risk exposures more efficiently and in a cost-effective manner.

The time to act is now, and the upcoming regulatory self-assessment should be conducted in conjunction with the planning of all future risk projects and data initiatives.

With its range of solutions and wealth of experience in the banking industry, Oracle Financial Services is the natural partner for your transformation journey to risk data excellence.



Enterprise Risk Management: Time for Data
Excellence

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