Embracing the Cloud to Make Risk Reporting More Efficient

The rise of social, mobile, analytics and cloud computing – or the SMAC Stack™ – means banks must adopt a new game plan to properly manage risks across their operations.

Executive Summary

Following the global financial crisis of 2007-2008, the importance of risk management has never been greater for the banking industry. As new regulations emerge each and every year, risk management is becoming exceedingly complicated – and it is growing increasingly expensive to implement new technologies that refine existing business processes and ensure compliance. In fact, IT spend on regulatory compliance is expected to increase five times (to 20% of the overall IT budget by 2015) and grow to $76 billion by 2015, from $20 billion in 2012 – a CAGR of 56%.

Cloud computing is not new to banks nor their technology stacks. Cloud-based services have become increasingly attractive to banks seeking to save money and simultaneously create more efficient ways of handling the dynamic pace of change in today’s financial services business. Numerous banks are reengineering their existing processes to accommodate mobile- and analytics-based offerings, core banking, noncore processes and payments.

As shown in Figure 1, overall spending by banks on cloud computing will increase to $26.4 billion by 2015.

This white paper highlights one high-value banking function – risk management – that is prone to continuous change, and proposes a cloud-based model to address the challenge of risk reporting.

The Business Case for Putting Risk Reporting in the Cloud

Cloud computing is playing a major role in helping banks transform as new competitive, regulatory and technology changes impact the business. Its various benefits include the ability to scale on demand without procuring intensive and expensive infrastructure, faster time-to-market and built-in analytics-as-a-service capabilities. These attributes compel banks to investigate the cloud as the engine to power business across functional areas, including tried-and-true core banking applications.

Risk Reporting: Key Data Characteristics

The reasons for embracing the cloud for risk reporting are manifold:

- **Risk reporting requires risk data aggregation.** With the increased demand for transparency and tighter regulations, banks need robust data architecture and an IT infrastructure to fully support data that informs risk.
The risk data generated needs to be accurate and reliable in order to meet normal and stress/crisis reporting accuracy requirements.\(^3\)

The risk data needs to be complete and include the banking data for each business line, region, legal entity, industry and other groupings specific to the risk in question.

These requirements – and the increased transparency required by regulators – are leading banks to become more data-centric. Cloud-based risk reporting can help with this transformation.

Cloud Computing Advances Data Aggregation

Cloud computing removes the cost of running in-house data centers as data storage becomes a virtual resource. Cloud storage can thus be scaled up or down depending on ever-changing reporting requirement volume. The cloud can combine real-time and historical financial data which can then be used in the risk reporting processes. This is done by developing specific cloud services in the software as a service (SaaS) layer for activities such as data downloading, filtering, categorization, parameter-based merging of real-time and historical data and computation of consolidated risk for each respective area. Figure 2 depicts the functions that can be applied through a cloud-based model for risk reporting.

Data-centricity is the primary requirement of risk reporting. Data storage on the cloud

Functions Ripe for Cloud-Based Risk Reporting

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Advantages of Private Cloud

- Reduces software licensing costs by centralizing across enterprise.
- Efficient use of hardware and network assets via a virtualized model that serves to reduce expansion of IT footprint.
- Can better absorb explosion of data without increasing hardware investments.
- Ability to add discrete services under a hybrid model.
- Offers better management control to both business and IT executives.


Note: Spending estimates based on assumptions of no clear global cloud standards.

Figure 1

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Figure 2
Cloud storage is extremely attractive to global banks that need key data to be stored and shared across various regions and business lines. The benefit of cloud storage is that a large number of users can access data as well as applications globally, thus reducing operational cost and adding flexibility. Figure 3 compares the annual spend (initial setup costs plus annual maintenance costs) on an in-house data center and a cloud-based solution, revealing an increasing delta between the two methods due to the lower annual maintenance costs of cloud storage.

**Cloud Extends Risk Reporting**

Many cloud offerings, such as our Business-Cloud™ solutions, contain cost-effective advanced business analytics solutions. (Learn more by reading our latest white paper on BusinessCloud and the “everything as a service” movement.) A cloud-based solution can provide business analytics in less time than traditional deployments. For instance, business analytics can be hosted on a bank’s private cloud and customized as per the bank’s requirements. Services provided through the cloud can help banks enhance their operations and develop new reports faster and with more flexibility. An advanced analytics solution can help identify, quantify and classify the data which can then be analyzed using local tools such as cluster analysis, visualization tools, etc. Also, since such applications run for a limited amount of time and for specific durations, this approach can be implemented on a private cloud where it is virtualized and made available as an on-demand service.

It also provides Web-based reports to various stakeholders and the flexibility to configure new reports as needed. Banks need not invest in in-house deployment or a fully-hosted service for this purpose. Software as a service (SaaS) allows financial institutions to take advantage of the functionalities provided by the cloud-based reporting software, without having to manage and invest up-front capital in in-house deployment. The software is provided as a pre-configured solution that simulates a typical bank operation and can be rolled out per the bank’s requirements. As far as regulatory reporting is considered, since the structure of reports must meet the stringent requirements of regulations such as Basel norms and Dodd-Frank, very little customization is required in the reports.

Big data analytics through the cloud can help make informed and real-time decisions based on the insights gained through various transactions. Since the data is aggregated in the cloud and is centralized, an integrated view of financial and risk data is available. Banks can develop forward-looking reporting capabilities with the ability to conduct what-if analysis and models to provide early warnings of any potential breaches of risk limits that may exceed the banks’ risk appetite. A solution such as IBM’s SPSS can provide predictive analysis for banks to make future decisions.

Regarding accessibility, Web-based risk reports can be more readily accessed by management and investors using standard Web browsers on computers or tablets. This not only empowers bank and external users, but adds additional operational flexibility since accessing risk reports becomes a self-service activity.
For smaller banks, the cloud can provide access to data analytics capabilities that are often too expensive for them to develop and maintain on their own. Such on-demand services can help such banks not only save money but at the same time manage risks.

IBM business analytics software and Temenos T24 for core banking enable banks to acquire risk reporting capabilities through the cloud. Bank of America Merrill Lynch implemented IaaS through IBM’s iDataPlex server to build and evaluate risk programs.4

**Proposed Model for Risk Reporting**

Considering the aforementioned benefits as well as challenges, a hybrid model for risk reporting can be developed. The main components of this model are illustrated in Figure 4.

Our model enables data sources to be accessed flexibly via Web services. Data security can be maintained using the bank’s existing databases. The reason: Risk reporting requires information from various lines of business and is dependent on these indirectly. The main functions, including data analytics and reporting, can be implemented using applications available on the private cloud which would gather information from the various sources of the bank and then process them according to senior management’s requirements.

**Benefits of Cloud-Managed Risk Reporting**

Cloud-based hosting offers several advantages over in-house application deployments:

- **Managing data storage:** Specialized reporting requires access to a wide variety of data, in real-time, for reporting, online analytical processing and advanced analytics. By pooling or sharing data from various locations, the cloud delivers efficient and increasingly flexible data centers to help in risk analytics and reporting.

- **Capital-expenditure savings:** The need to purchase IT systems and other infrastructure is eliminated. It thus becomes easier and less costly for a bank to adopt cloud-based hosting.

- **Reduction in operational expenditure:** The expenditure required for paying administrator salaries, real-estate mortgages/rents and electricity bills is reduced. The cloud-based model offers usage-based commercial models based on resource consumption. This makes it highly scalable for large banks and affordable for smaller ones.

- **Ease of management:** The management-related responsibilities such as procurement, upgrades, maintenance of software/hardware and supporting infrastructure are assumed by the cloud provider. Hence, the bank is relieved of these responsibilities and can focus on its core expertise.

**Challenges Foreseen**

Like any other form of network computing, the cloud can create performance issues such as latency (the time taken to process requests over the network), data synchronization, scalability of applications and data management.

The major challenge is perceived security. Also, government bodies and regulators have increasingly become sensitive about insecure data sharing across borders. Data storage in the public cloud is considered to be a risky proposition by many banks. A number of banks are therefore adopting “multi-tenant” cloud offerings.5

However, private cloud models are more popular since they provide all the benefits of cloud computing and safeguard data by denying access to external entities. In order to improve security, service providers have started to encrypt data that is stored as well as transmitted.

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**Functions Ripe for Cloud-Based Risk Reporting**

<table>
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<th>Component</th>
<th>Potential Cloud Solution</th>
<th>Focus Area</th>
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<td>Database</td>
<td>No movement from the current storage model.</td>
<td>Financial data from various lines of business.</td>
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<tr>
<td>Data Analytics</td>
<td>Private cloud.</td>
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<td>Risk Reporting</td>
<td>Private cloud.</td>
<td>SaaS-based model. Operational, market and credit risk reporting based on data analysis models.</td>
</tr>
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</table>

Figure 4
Another major challenge for a bank is migrating from current in-house systems to cloud computing models. Migrating an entire data center can be cost-intensive and risky due to the huge amount of data contained in most banks’ databases.

Looking Ahead
In the long run, smart adoption of new technologies deployed to advance process optimization and customer loyalty will determine winners and losers in the financial services industry. After being watched from the sidelines, cloud is finally being adopted by numerous banks for core banking and other key business functions. However, banks need a clear strategy while moving important functions to the cloud.

As risk reporting rises in importance in the aftermath of the global economic and financial meltdown, banks must find more cost-effective and flexible ways of utilizing the massive amounts of data available from various sources and ensure adherence with regulations to raise alarms in advance of noncompliance. Cloud computing can help banks achieve this.

Footnotes
1 Banking regulations sector intelligence report, Cognizant.
2 The Tower Group, “Destinations 2015: Spending on cloud computing in financial services.”
3 Comprehensive Capital Analysis and Review (CCAR), Dodd-Frank Act.
5 Multi-tenant cloud offerings: Using a multi-tenant architecture, a software application is designed to virtually partition its data and configuration, and each client organization works with a customized virtual application.

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