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July 2007

Basel II: From Compliance to Competitive Advantage

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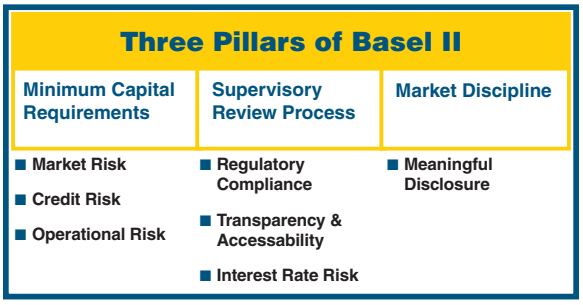
When thinking of finance capitals, New York, London, Singapore and Hong Kong typically come to mind. However, Basel, Switzerland can have just as much impact upon the world of international banking. It is here that the Central Banks of the Group of Ten (G10), the 10 wealthiest nations in the world, meet as the Basel Committee on Banking Supervision. While the Committee's conclusions do not have legal force, its standards, guidelines and recommendations of best practice are typically implemented as law by each of the member countries.

The Basel Committee on Banking Supervision has created multiple recommendations, including two Basel Capital Accords. The original Basel Capital Accord, established in 1988, was intended to level the playing field in the international Financial Services community by addressing geographical inequities in regulation and establishing a uniform minimum capital requirement for Financial Services Institutions (FSIs). However, over the past decade the effectiveness of the original accord has diminished.

The new Capital Accord, Basel II, is intended to bring a greater rigor to risk measurement and management practices in Financial Services and to better align capital reserves with actual risk exposure. As with the first Accord, Basel II is again intended to "level the playing field" in Financial Services, bringing parity to the marketplace and ensuring fair competition across geographies. This accord sets bank supervision, risk-based capital, and disclosure requirements for banks operating internationally and is scheduled for global implementation beginning in January of 2008 with full implementation by 2012. Basel II's implementation in the United States, and the specifics of its regulations and timing, are still under heated discussion by banks, legislators and regulators.



Basel II comes with both incentives and costs. The costs are those that must be spent to conform to the various requirements of the Accord – and they are significant. The incentives are for those organizations who embrace the Accord to better manage their risk. Basel II proposes that FSIs who comply with the Accord and effectively implement the advanced Internal Ratings-Based (IRB) approach will get reduced requirements for capital reserves. While that may be true outside the United States, hope grows dim for FSIs in the US, due to regulatory and legislative pressures. However, as FSIs have begun to implement Basel II compliance, forward-looking banks are realizing that the opportunities for competitive advantage from Basel II implementation go far beyond just capital reserve reduction, and into significantly improved customer service, operational efficiencies and portfolio risk management, if Basel II is no longer viewed as only a compliance effort.

As organizations have embraced Basel, nearly all bank executives say data capture and data management is one of their main challenges in implementing a solution. Basel requires much more detailed information capture, and the ability to retain that data for long periods of time. While some of that data is structured (tables and fields), much more of it is unstructured – financial statements, analysis spreadsheets, evaluation write-ups, approval documentation, etc.; frequently hundreds of pages for a large deal, and even 20-30 pages for a small one.

Basel's focus on Operational Risk also increases the requirements for automated processes. While it is possible to continue to use documents, spreadsheets and email to process a loan evaluation, increasingly banks are realizing that managing and tracking these complex processes with manual processes is difficult, expensive and risk prone.

IBM's Enterprise Content Management (ECM) solutions are uniquely focused on managing complex business processes and the corresponding data and information that drive these processes, enabling effective process controls, triggering organizational response to risk, and driving continuous process improvement.

In the following document, we will discuss some of the issues and opportunities associated with the Basel II Capital Accord. We will also explore the central role that Enterprise Content Management will play in enabling Financial Services Institutions to achieve true competitive advantage.

Basel II: Business Challenge or Opportunity?

There is no doubt that Basel II introduces additional complexity for most Financial Services organizations. Compliance will be challenging and many organizations will struggle simply to meet the established deadlines for the new Accord. Smaller FSIs in particular will find it difficult to amass the historical data necessary to validate their models for risk measurement and management. Basel II compliance represents a true business challenge for every Financial Services organization. Forward-thinking FSIs have elected to look past the immediate challenges posed by Basel II. These organizations are aggressively pursuing compliance today as an opportunity for competitive advantage tomorrow. It is intended that the Standardized Approach for risk management proposed under Basel II will not increase the aggregate regulatory capital requirements for banks that elect to employ this model. But it is

obvious that banks that leverage the advanced Internal Ratings-Based (IRB) approach for credit risk and, more importantly, the Advanced Measurement Approach (AMA) for operational risk will gain greater benefit from the new Capital Accord.

> *"While many institutions still look at Basel II with a mindset of basic compliance, others are actively pursuing a more advanced approach to risk management for competitive advantage and operational efficiency. Financial institutions that are exposed to even moderate levels of credit risk and operational complexity should benefit by embracing a more advanced Basel II risk management framework."*
>
> **- The TowerGroup, Inc. [1]**

Operational Risk Measurement Approaches

Basic Indicator Approach (BIA)	Standardized Approach	Advanced Measurement Approach (AMA)
Operational risk capital is calculated using a "proxy" indicator for the entire bank (typically, gross income). This indicator is then multiplied by a factor provided by the regulatory body.	This method is slightly more granular than the BIA method in that it distinguishes risk by line of business. Eight lines of business have been identified by the Basel Committee:	The AMA method is a fully granular, bottom-up approach to risk assessment. Currently, the Basel Committee recognizes three different types of AMA approaches:
	■ **Corporate Finance** ■ **Trading & Sales** ■ **Retail Banking** ■ **Commercial Banking** ■ **Payment & Settlement** ■ **Agency Services & Custody** ■ **Asset Management** ■ **Retail Brokerage** For each line of business, operational risk capital is calculated based on a factor of the primary indicator (gross income). This factor is again supplied by the regulatory body.	■ **Internal Measurement** - Operational risk capital calculation is based on Expected Loss (EL) for which event type across the organization's various business units. ■ **Loan Distribution** - Banks generate and utilize a loss distribution over a particular time period (typically one year). ■ **Scoreboard** - This method begins with a baseline level of capital reserves. Reserves are then adjusted according to scoreboard data provided by personnel on a periodic basis. This approach allows banks to rapidly adjust capital reserves based on risk mitigation efforts.

Simply put, firms that leverage these advanced risk measurement approaches will be able to more accurately represent their risk to their respective regulatory agencies. If allowed, this will result in reduced aggregate capital requirements, effectively lowering the cost of capital to the organization. Just as important, by managing risk more effectively, these organizations will be able to realize greater profit margins or more competitively priced products and services, and seize market share from the competition.

Analyzing and Documenting Credit Risk

Almost every FSI that is currently implementing Basel is using the Internal Ratings-Based approach for credit risk analysis. The IRB approach moves organizations from a single risk rating for an exposure to a dual risk rating that separates the probability of default (PD) from the loss given default (LGD). It requires organizations to calculate on at least an annual basis the exposure at default (EAD). In addition to the requirements of these calculations, it imposes some key requirements on data storage.

Not only must conforming FSBs be able to document their decisions, but sufficient information must be retained such that the decision could be recreated. So any scoring calculations and models must be retained, as well as the input data that the model used. In addition, there is a requirement that any future scoring models be able to run against historical data, to determine the change in ratings based upon the new model parameters. Also, any revisions to credit ratings (such as in an annual review) must be documented with the same level of quality as the initial ratings analysis.

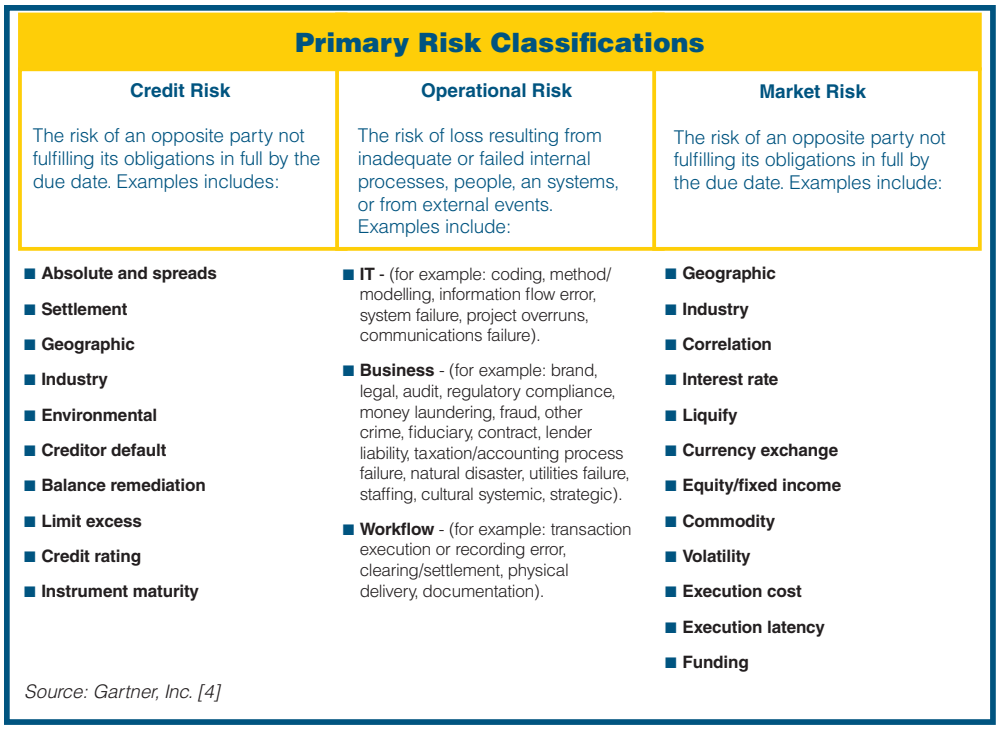
Actual risk experience in terms of loan defaults, and actual loss experience must also be documented in detail. The amount of recovery for each asset class and the comparison to its IRB scoring weighting must exist.

Focusing on Operational Risk

Most FSIs seeking competitive advantage from Basel II have chosen to focus on operational risk. Why? Because most of these firms feel that adopting the Advanced IRB approach to measuring credit risk is more a matter of avoiding competitive disadvantage than establishing differentiation. In a recent authoritative survey, 70 percent of respondents felt that Operational Risk Management represented the best opportunity for differentiation and competitive advantage under Basel II. [2] As a result, leading firms are now putting in place the necessary processes, technology and internal controls to fully adopt the Advanced Measurement Approach (AMA) for measuring operational risk.

What is Operational Risk?

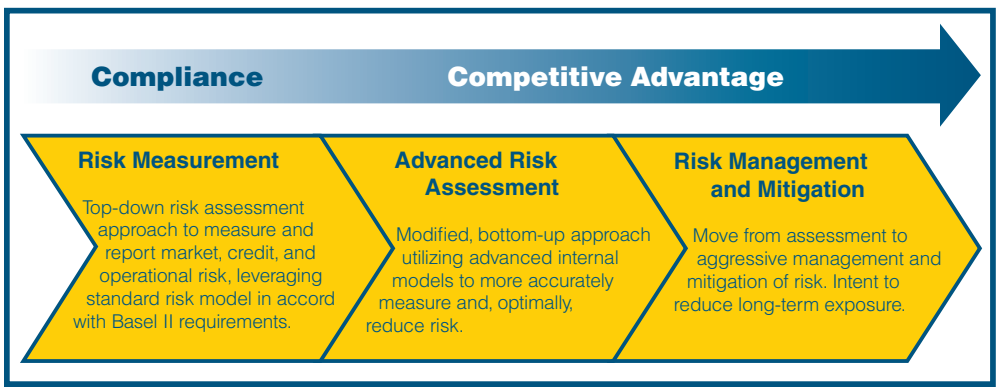
For the sake of simplicity, here is a definition of key parts of operational risk put forth by the Basel Committee: *"The most important types of operational risk involve breakdowns in internal controls and corporate governance. Such breakdowns can lead to financial losses through error, fraud, or failure to perform in a timely manner or cause the interests of the bank to be compromised in some other way, for example, by its dealers, lending officers or other staff exceeding their authority or conducting business in an unethical or risky manner. Other aspects of operational risk include major failure of information technology systems or events such as major fires or other disasters."* [3]



The following diagram, provided by Gartner Inc., depicts the three major risk classifications that Basel II addresses – credit, operational and market – and provides several different examples of potential operational risk incidents: it is important to note that the lines between operational and credit or even market risk are often blurry. At some point, operational issues can lead directly to credit issues and loss of position in the marketplace. The balance of this document will focus on the various aspects of operational risk as outlined above.

From Compliance to Competitive Advantage

There appears to be an emerging, logical progression in how firms are preparing for the new Basel Accord. This progression incorporates three distinct phases.



1. Risk Measurement

During this phase, most firms will focus on gathering historical risk data to establish the necessary baseline for risk measurement activities. It is important to note that many firms – and most notably smaller firms – may elect to stop investing in Basel II once they have achieved the required level of compliance. It is important to note that this is largely a rearward-looking approach to risk management – employing past risk events to predict and measure future exposure.

2. Advanced Risk Assessment

Almost every FSI that is currently implementing Basel is using the IRB approach. To implement these processes, FSIs will need to employ more detailed, bottom-up methods for gathering and reporting risk information. These activities will produce a more granular view of risk exposure and events, enabling firms to be more accurate in representing current market, credit and operational risk. This phase of response will begin to move firms from compliance to achieving some level of competitive advantage, especially as they begin to adopt the AMA for operational risk. It should be noted that moving to the Advanced IRB and AMA for risk measurement significantly increases the complexity of activity. Rigorous processes for gathering risk data and information and effective internal controls must be established to validate the information gathering process.

3. Risk Management and Mitigation

While credit risk management is seen as a core competency by most FSIs, additional opportunity is seen in operational risk management. Additional information provided by Basel data capture and analysis should allow FSIs to significantly improve their credit risk management, especially at the portfolio level. Addressing these risks involves asking the two questions that occur in all risk management:

- What activities or processes typically incur the highest incidence of risk events?
- By incident, where does the organization incur the greatest monetary exposure?

For example, an activity may have a very high incidence of risk events, but very low overall monetary exposure, assigning it a lower priority for risk mitigation. The next step in this activity will be to stack-rank their processes. Once a priority order has been established, FSIs will begin to increase internal controls and enable continuous process improvement to reduce their overall risk exposure. As in many areas, it is typical that roughly 80 percent of a FSIs risk exposure is incorporated in the top 20 percent of their prioritized processes.

The Geographies of Basel II

There is tremendous variance in how Financial Services organizations are responding to Basel II. However, some key trends are emerging in various geographies. Europe has proven to be the most active in implementing Basel II, with widespread activity across the European marketplace and most FSIs actively positioning themselves for full compliance. However, in general, the approach to Basel II compliance in Europe has been fairly conservative. With notable exceptions, most firms have elected to focus primarily on compliance and, in many cases, on minimizing Basel II expenditures. Many banks are finding it difficult to develop the necessary historical data required under Basel II and will be initially forced to adopt the Standardized approach to credit risk management. Firms focusing more on operational risk management appear to be the exception rather than the rule.

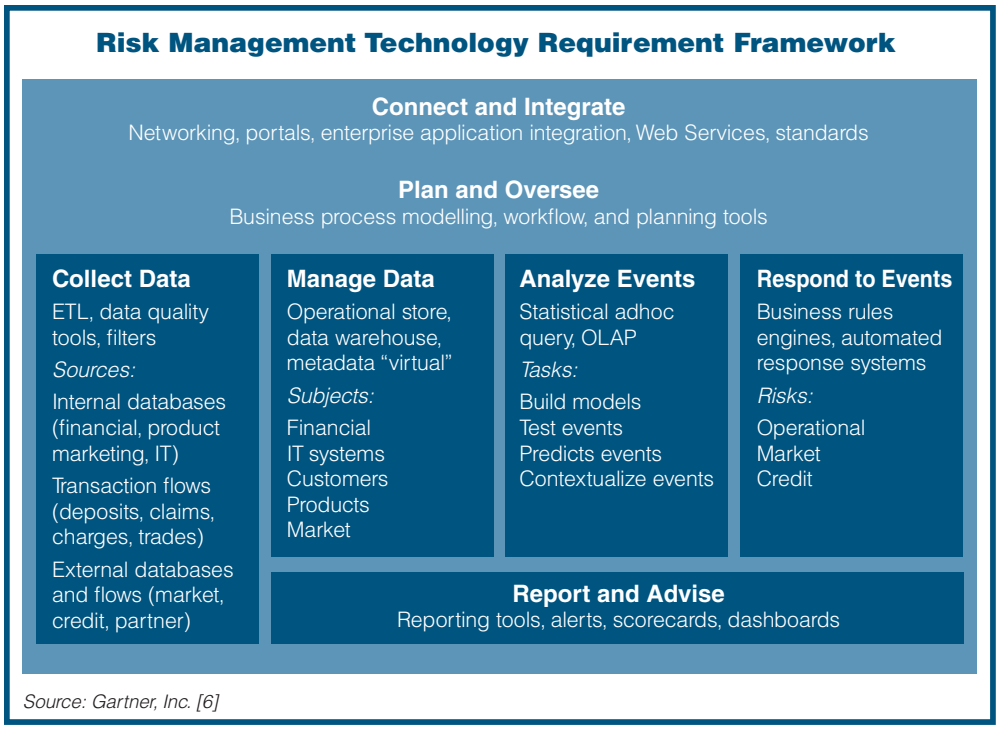
In the United States, where it is likely that only a small percentage of banking firms will be required to comply with Basel II, there has been a more aggressive response. Most of the large US Bank Corporations (which will be subject to Basel II) have been subject to stringent credit risk regulation for some time. They are comfortable with the requirements of the Advanced IRB approach and are now beginning to focus heavily on operational risk management. The most forward looking of these firms have begun to actively catalogue and review their operational risk processes, seeking to identify areas of high-risk exposure for future mitigation efforts.

It would appear that the Asian market has been slow to come around to the real competitive implications of Basel II. Issues with non-performing loans have distracted the Japanese banks and concerns about funding have hampered banks in other parts of Asia. Unfortunately, these same organizations already are suffering from intense competitive pressure and Basel II will, in all probability, make it even more difficult for Asian banks to compete effectively with many of the international firms. China recently submitted a letter to the BIS indicating they would not adopt the Basel II Accord in compliance with the established 2006 deadline and would continue to comply with the tenets of the 1988 agreement. In the communication, China specifically cited concerns over "opportunities for competitive disadvantage."

"One process that received special mention was a formal new product review process involving business risk management, and internal control functions. Several banks noted that necessity of updating risk evaluation and assessments of the quality of controls as products and activities change and as deficiencies are discovered." – Basel Committee on Banking Supervision [5]

Enterprise Content Management: A Key Component of Enterprise Risk Management Solutions

Many Financial Services organizations are now planning to deploy Enterprise Risk Management (ERM) architectures. Far from a simple point solution, ERM architectures incorporate a broad array of integrated technologies. The following diagram, produced by Gartner Inc., provides a requirements framework:



Source: Gartner, Inc. [6]

It is important to note that no single-point solution can adequately address the full spectrum of capabilities depicted in this diagram. Rather, the ERM architecture is typically comprised of a central Enterprise Content Management platform that has been tightly integrated with other essential technologies, including:

- ERP applications;
- Business rules engines;
- Data warehouses and analytics (OLAP); and
- Reporting and querying toolsets.

Understanding Enterprise Content Management

IBM ECM and Business Process Management (BPM) solutions are designed to give your company a competitive edge whenever there's a decision to be made. With the combination of process, content and connectivity, our solutions allow customers to build and sustain competitive advantage by managing content throughout their organization, automating and streamlining their business processes, and providing the full-spectrum of connectivity needed to simplify your critical and everyday decision making.

"One area that will gain momentum from new regulatory demands is the movement toward straight-through processing. The restructuring of business and technology processes to enable the simultaneous automated exchange of information across lines of business is key to effective risk management. As business processes are increasingly 'e-enabled,' risk identification and management require faster response. Institutions can no longer afford to manage risk using the 'rear view' mirror approach historical data offers."
– Gartner Inc. [7]

Process

Process is at the core of all Financial Services Institutions. Simply put, process is how business gets done. ECM solutions incorporate business process management functionality to effectively automate, control and accelerate business processes. BPM encompasses more than simple workflow automation capabilities; processes can be modeled, analyzed and improved to ensure continual regulatory compliance and maximum operational efficiency.

Content

Content is simply information. It can include unstructured information such as scanned images, electronic documents (e.g. MS Excel files), rich media and faxes, plus structured data such as information typically stored in a database. In most Financial Services organizations, unstructured information can represent up to 80 percent of all corporate content.

Connectivity

Technology cannot exist in a vacuum. In order to gain maximum value from both new and existing IT investments, systems must be able to connect to one another. ECM incorporates business integration capabilities, allowing Financial Services organizations to leverage their existing IT architectures in developing new ERM solutions.

ECM and the ERM Architecture

ECM plays a critical role in each of the Risk Management Technology Requirement Framework areas shown in the table above:

Connect and Integrate

IBM ECM solutions incorporate robust connectivity capabilities that allow seamless integration with existing technology. When combined with IBM's BPM capabilities, connectivity allows ECM to deliver critical structured information (data) to process participants and improve decision-making, efficiency and process control. IBM ECM also provides out-of-the-box integration with many of the leading portal providers, allowing for the rapid development of management/audit dashboards and increasing transparency of core business processes, events and outcomes.

Plan and Oversee

Planning and oversight of compliance and risk management functions is a reiterative, process-driven activity. With a strong foundation in BPM, IBM ECM enables FSIs to rapidly model new and existing business processes. Through process simulation, new procedures can be fully tested prior to production implementation. The ability to model and test new or modified procedures can further reduce operational risk across the organization.

Collect Data

IBM ECM provides a fully scalable, enterprise-class foundation for managing unstructured content. It allows FSIs to establish a single, centralized repository for critical Basel II content that is accessible throughout the enterprise and also can provide secure third-party access for auditors, regulators and other interested parties. Through Business Process Management, IBM has the ability to collect and report process execution and metrics in great detail. Risk events can be identified and captured as they occur to provide greater accuracy in measuring the incidence of risk and the resulting exposure.

Manage Data

Content can be stored indefinitely and then rapidly located and retrieved from the enterprise repository. Document retention can be automated ensuring that critical records are retained for the appropriate amount of time. ECM also incorporates robust versioning and check-in/check-out functionality, allowing content to be modified and annotated without adversely affecting the validity of the original documentation. Core business processes can also be versioned and reproduced at any point in time to provide an accurate historical representation of compliance and risk management activities.

Analyze Events

One of the key benefits of BPM is the ability to model and analyze risk events. New and existing risk management processes can be laid out within IBM ECM so risk events can be simulated and response mechanisms can be tested for future analysis and response tuning.

Respond to Events

IBM ECM incorporates an event-driven BPM architecture that allows FSIs to define “triggers” – predetermined events that initiate completely automated responses. An automated response can range from a simple electronic notification to a complex, multi-threaded business process that allows a firm to coordinate response across the organization and effectively mitigate risk at an enterprise level.

Report and Advice

In addition to automated electronic messaging, IBM ECM can gather critical metrics throughout a process lifecycle, enabling FSIs to gain valuable insight into their core business processes and various risk events. Through native portal and application server integration capabilities, IBM ECM can drive this aggregated information to any number of available performance dashboards for rapid access by management.

ECM and ERM Benefits

Within the ERM architecture, IBM ECM enables Financial Services organizations to better measure, monitor and respond to operational risk.

Actively Monitor and Respond to Risk

FSIs must actively monitor and rapidly respond to risk events as they occur. Relying exclusively on historical risk information to predict and respond to risk exposure is analogous to driving a car while looking in the rear-view mirror. It only provides part of the picture.

IBM ECM is designed to enable real-time response to critical risk issues such as suspected fraud, human errors, governance issues, and more. Because IBM incorporates an event-driven architecture, key individuals in the organization can be immediately notified when a risk event occurs. Further, IBM can outline the appropriate response to mitigate and manage the risk.

Out-of-the-box integration with industry-leading business rules engines lets IBM ECM leverage complex business rules for even greater efficacy in risk response.

Drive Operational Transparency

IBM ECM ensures that management is instantly made aware of critical risk events and actively monitors the organization's response to the incident. Further, by means of a performance dashboard, executive leadership can be provided with a holistic, enterprise view of risk across the organization. A different view of this same information can be provided to third-party auditors and government regulators to facilitate continued compliance with Basel II.

Centralize Risk Management Processes

Basel II is also driving FSIs to consider consolidating their risk management processes and procedures into a more centralized approach. IBM ECM provides an ideal platform for centralizing risk management processes. An unlimited number of processes can be developed and stored, rapidly modified utilizing a user-friendly graphic interface, and then immediately deployed. Risk processes can be easily replicated, allowing for best practices to be leveraged across the organization.

> *"Under the proposed requirements, an institution's minimum required capital could increase significantly if it fails to take advantage of the more sophisticated internal measurement options offered under the new accord, and cannot prove – through historical data, current processes and methodologies – that it qualifies for a lower capital charge. This requires demonstrated compliance with several expected standards regarding the identification, measurement, and control of risk that can only be achieved with risk practices that are integrated across the enterprise, including operational data capture, analysis, and overall risk management processes."*
>
> **– Gartner Inc. [8]**

Accomplish True Business Agility

Financial Services organizations should not only aim to actively manage and respond to risk, they should also mitigate risk as new products and services are developed and introduced. IBM ECM incorporates several capabilities that enable FSIs to better manage risk associated with new products and to achieve true business agility. ECM allows FSIs to simulate and test the impact of new products and services on their existing risk processes and procedures. New processes can then be rapidly modeled and existing processes quickly modified to address any deficiencies.

Looking Beyond Basel II

IBM ECM is not only a critical component of the ERM architecture, but also an enterprise-class ECM platform capable of delivering significant business value across the organization. What is often overlooked in addressing regulatory compliance and risk management requirements is the tremendous opportunity for cycle-time reductions and operational cost savings inherent in many core business processes.

Conclusion

The Basel II Capital Accord is the latest in a long line of regulatory requirements to emerge in the Financial Services marketplace. However, in the end, responding to Basel II isn't simply a costly exercise in achieving compliance; rather, it is a critical opportunity for gaining competitive advantage. Financial Services Institutions must seize this opportunity to more accurately measure and better manage risk across the entire enterprise. These efforts will yield significant returns in terms of reduced capital reserve requirements, increased profitability and greater market share. In order to realize these returns and move from compliance to competitive advantage, FSIs must leverage ECM as the central technology in their ERM architecture. It is only through ECM's robust business process and content management capabilities that FSIs can actively monitor and mitigate risk, improve organizational transparency and accomplish true business agility to fully take advantage of the unique opportunity Basel II offers.

> *"Organizations must balance the tactical investments required to meet short-term regulatory deadlines with the long-term requirements to strategically manage overall regulatory demands while simultaneously improving business performance and efficiency.*
>
> **– META Group [9]**

IBM: Industry Leadership

IBM's fully integrated ECM platform offers Banking and Financial Markets industry solutions for managing content and business processes while connecting these assets with applications and legacy systems across the enterprise. IBM ECM solutions are at work in more than 1300 banking and financial institutions around the world, including 23 of the top 25 banks in the world.

About IBM ECM

As the clear market leader in Enterprise Content Management (ECM), IBM's ECM solutions help organizations make better decisions, faster by managing content, optimizing business processes and enabling compliance through an integrated information infrastructure. IBM's ECM portfolio delivers a broad set of capabilities and solutions that integrate with existing information systems to help organizations drive greater value from their content to solve today's top business challenges. The world's leading organizations rely on IBM enterprise content management to manage their mission-critical business content and processes.

IBM Corporation
3565 Harbor Boulevard
Costa Mesa, CA 92626-1420
USA

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For more information, visit **ibm.com**/software/data/cm.

[1] Basel II Operational Risk Management Strategies and FSI Performance; TowerGroup, Director Guillermo Kopp, March 2003

[2] Your Basel II Implementation: compliant or Catalytic?; IBM, Institute for Business Value, 2003

[3] Operational Risk Management; Basel Committee on Banking Supervision, 1998

[4] Enterprise Risk Management and Financial Services IT; Gartner Inc., 2003

[5] Operational Risk Management; Basel Committee on Banking Supervision, 1998

[6] Technology Suites Begin to Address ERM Processes; Gartner Inc., 2003

[7] Risk Management in the New Regulatory Environment; Gartner Inc., 2003

[8] Ibid

[9] Stocking the Compliance Toolbox to Meet SOX Section 404; META Group, 2003

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