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corporate governance

Anti-Money Laundering and the U.S. Patriot Act

by williamlaurent

Global corporations continue to accelerate their compliance and governance initiatives in order to meet the latest regulatory mandates and better protect the reputation of their firms. In addition to the most visible of compliance projects (such as Sarbanes-Oxley and Basel II), international financial organizations – which offer banking, securities and insurance products – continue to struggle in implementing timely crusades against money laundering. For companies based in or doing business in the United States, the Patriot Act adds yet another dimension to existing enterprise anti-money laundering (AML) strategies - requiring additional resources and mechanisms that support competent Patriot Act compliance.

The U.S. Patriot Act was signed into law October 2001. It contains many strong provisions to prevent and detect international money laundering - especially with respect to terrorist activities. Title III of the Patriot Act contains the broad and far-reaching International Money Laundering Abatement and Anti-Terrorist Financing Act of 2001; this directly and immediately impacted many institutions (financial and nonfinancial) in the United States. It is important to note that the origin of funds used in the financing of terrorism do not necessarily come as a direct result of crime, which is a common thread in money laundering.

Approximately a decade before the Patriot Act, G-7 Nations established the Financial Action Task Force (FATF) to study the problem of money laundering and to implement measures designed to block criminal access to the international financial system. The Task Force's guidelines are the standard against which national AML laws are measured.[1] Of particular interest is the evolving list published by the FATF that catalogs countries and government entities that are regarded as uncooperative in combating international money laundering.

For many organizations, the existing systems and strategies currently in place to police money laundering matters will, with a little work, be able to support the affairs of Patriot Act compliance. Assuming that robust AML software and procedures are resident, expedient actualization of new models of risk identification and forensic data mining (which include fresh structures of trending, pattern identification and alerts) will be tenable. Existing operational and IT solutions that investigate mountains of customer activity data (in order to detect fraud or suspicious behaviors) can most often be leveraged and expanded to meet both Patriot Act and AML requirements simultaneously.

No matter how solid a company's procedures, systems or training to detect and deter money laundering, today's criminals have become increasingly sophisticated. Vulnerability for even the most technically and operationally astute of enterprises has increased over the past few years. Institutions that are able to cultivate a deep familiarity with those entities with which they transact business will enjoy a virtual layer of protection against money laundering. "Know your customer" (KYC) initiatives, when done correctly and ethically (privacy and confidentiality concerns of clients must be totally respected), can offer a solid front line means of protection against money laundering activities. Ethical customer intelligence and due diligence must occupy a primary place on the corporate governance agenda. The fight against money laundering has become an evolving mission that requires the constant KYC vigilance of financial institutions: the impact and risks of money laundering are still being fleshed out, as are the best practices needed to mitigate and alleviate these hazards.

Aside from immense damage and taint to an organization's stature and trustworthiness, money laundering undermines confidence in the worldwide financial system. Still worse, it hurts the greater public, especially when it is used to fuel and fund acts of terror and further criminal activity. Ensuring an institution's requisite compliance with the Patriot Act as well as AML regulations (applicable to all jurisdictions where business is conducted) entails a level of unprecedented cooperation – within the financial community, with regulators and auditors, with government and law enforcement agencies – to identify and report questionable financial activity. The greater a financial entity's global breadth, the more they are finding themselves under new and wide-reaching regulatory microscopes, accountable for illegal financial activities that are serviced with assets under their aegis. Both the Patriot Act and current AML legislation are still considered to be in their infancy and will unquestionably be subject to future changes. For the near future, existing corporate governance policies that address these dynamic precepts will need periodic updating and amending. DMR

Reference:

1. Go to www.fatf-gafi.org for more information on the FATF guidelines.

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Business Continuity Dashboards

by williamlaurent

Business continuity (BC) projects have recently become more likely to be considered components of enterprise corporate governance strategy. Managing a company's risk exposure to business interruptions and keeping business operations running at acceptable levels under duress is a critical component of overall corporate strategy. BC dashboards are the latest class of business intelligence (BI) applications, as senior management desires more transparency – both proactive and reactive – into their organization's crisis management infrastructure and methodologies. "The business need for BC dashboards becomes more apparent every day – across all industries. Early adoptors of BC dashboards have reaped measurable competitive advantage by being able to better control multiple categories of risk from one dedicated physical location and logical perspective," says Cris Solomon, a San Francisco Bay-area senior consultant in business continuity.

Many corporate data supply chains have become more mature in terms of integrity and distribution; however, not enough attention is paid to BC in associated service level agreements. As supply chains have lengthened, sophisticated new architectures and technologies have not necessarily meant better risk mitigation and reduced exposure to serious outages in continuity. System and process dependencies continue to become more tangled and less centralized despite innovations in the service-oriented delivery of information. In addition, cutting-edge technical solutions have resulted in a reshuffling of accountability and responsibility so that business impact assessment (BIA) remains a difficult chore. Data supply chains are complicated and can be composed of any number of entities – classified as systems, facilities, applications, people, vendors or hardware. All dependencies in the data supply chain must be understood if one is to get to a place where quality BIA can be conducted in order to gauge and assess a company's readiness and risk of disaster. All along the supply chain are points of hand off or collaboration that require service agreements for capacity, timeliness, integrity and beyond. Such characteristics of system and data flow need to, at a minimum, be codified and saved as metadata or, better still, be reflected in a rules engine or mapping tool that will be able to reproduce all dependencies and interrelationships as both relational content and graphical flows. Eventually, this information will be used to seed the BC dashboard as well. An enormous amount of data – coming from disparate enterprise silos – about system and business entities/assets will have to be merged with BC-specific facts such as recovery time objective and recovery point objective in order to get a picture of BC resilience in all of its flavors. (Note that because BC resilience is somewhat difficult to measure in pure data terms, creative key performance indicators [KPIs] will need to be brainstormed and incorporated into the dashboard.) Once an enterprise system discovery has been completed, not only will it be easier to support business continuity policy, future data integration projects will become more streamlined and controlled because all interdependencies will be mapped and thus better poised to drive and adapt to business and system changes.

A BC dashboard may go outside the proactive realm, morphing into more of a portal by introducing reactive tools and measures in order to directly assist in managing a crisis or business outage, incorporating real-time feedback as part of a control center. Such a system would be driven by a regimen of indicators and alerts that track the current state of affairs in enterprise systems and notify the proper responders to address problems in their domains of responsibility. Responsibility should be defined by an incident command structure (ICS) and be implemented in a highly available distribution model, which will accommodate "in the field" first responders who may only have access to the system via handheld remote devices. During a crisis, the BC command chain or ICS must be able to make status adjustments to situational scenarios according to checklists and report them back up the chain of command. All incident history will be logged and archived so that it can be used for future trending and BIA analysis in order to develop better response strategies and methodologies. Because BC portals are large undertakings, merging the proactive with the reactive, they are usually done in lockstep along preselected business silos, phased to show return on investment in the quickest possible fashion. One interim option to portal construction is virtual integration, meaning that although heterogeneous data is not truly integrated and still exists in a siloed state, it is assembled for consumption in one place dynamically.

Senior executives badly need to get their arms around their organization's cap ability and readiness to respond to all classifications of disasters. Like other categorizations of BI data, information gleaned from a BC dashboard is an outstanding candidate for graphical data analysis (using a state-of-the-art data visualization tool), which enables top-level management to see trends, relationships, risks and exposures painted with a broad brush for lucid and quick decision-making in budgeting, accountability and reporting to stakeholders. Because BC cuts across all enterprise business segments, product lines and classes of assets, the biggest challenge to achieving robust BC intelligence will be the integration of data about a highly complex and complicated web of related systems, process, people, information and other assets. DMR

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Dashboarding Governance

by williamlaurent

Building a business intelligence (BI) dashboard for corporate governance is the primary support mechanism for a company's entire portfolio of enterprise and IT governance initiatives. Governance dashboard solutions are giving organizations improved visibility into areas of their business (IT, compliance, risk, etc.) that have been historically opaque and cloudy. As a byproduct of these dashboards, business strategy becomes better aligned with IT spending through the use of symbiotic metrics, balanced scorecards and complementary governance methodologies such as the CPR (conformance, performance and relating responsibility) framework.

The metrics used in dashboards are most commonly called key performance indicators (KPIs) and measure the enterprise's performance against consensual and well-defined goals and targets of excellence such as Six Sigma and Balanced Scorecard methodologies. KPIs will help drive the business in the desired strategic direction and serve as guideposts for quality and value innovation. They will aid in identification of excellent performance (strategic and tactical) and the correction of poor execution. Associated result thresholds built around KPIs can present management with "red alerts" and raise exception processing, better positioning management to be catalysts for organizational change. An executive will be able to easily tell if the company is underperforming or overperforming in critical areas and give immediate attention to the rectification of problems or capitalize on potential opportunities. The most common classifications of KPIs are leading and lagging indicators. Leading indicators yardstick business processes and activities that will have an impact on future corporate performance; they can, more often that not, be thought of as qualitative benchmarks. Lagging indicators measure the end result of past activity such as financial actualization and other quantitative-oriented constructs.

Many companies encounter trouble in defining a robust set of KPIs that properly aid in the monitoring and measuring of the business's performance, let alone drive continuous future improvements in operational quality and revenue. KPIs must steadfastly depend on business strategy as well as the methodology chosen for governance, but their definition is most impacted by the type of analysis that will be performed. Most often, the problem is that the key drivers of what is being measured have different ontologies – the who, what, where, how and why of underlying data (and thus the behaviors that KPIs will measure) will be divergent depending on the stakeholder and business component being measured. For example, a business continuity (BC) team will need to work with data that has a specific BC logistics focus – details about technical infrastructure and associated personnel, hardware vulnerabilities and incident command structures. These dashboard users will need to focus on measures that convey the degree to which business operations can be carried out in the event of disruption or what mission-critical systems have priority in a disaster recovery scenario. Other dashboard audiences will need to measure very different areas, such as regulatory compliance or risk management – therefore using vastly different KPIs that are more often associated with traditional corporate governance topics. Added complexity will quickly arise. For instance, some audiences will want to focus on classic output metrics (financial); for others, process or procedural metrics such as time to market, inventory supply and customer hold time will be more vital. The point is that you must know what kinds of questions will be asked of corporate data before you can properly define KPIs. While some data dimensions, such as geographic regions, application names and various market and reference data, may be shared among stakeholders, many won't. The same applies for measures of performance. Thus, the decision to build separate dashboards with siloed data marts versus trying to combine larger data sets in a cross-functional dashboard – attempting to solve every question of risk, compliance and BC in one holistic environment – will be tantamount.

In addition to KPI creation, the skillful consolidation of complex assemblages of data – so that they look and act like individual units of information from which management can perform intelligent drilling and pivoting – is the most critical success factor for dashboard success. For enterprise dashboards that attempt to provide intelligence on numerous categories of governance questions, supporting infrastructure must be carefully architected; data integration expertise, especially, will need to be in full abundance. Untangling the webs of business rules and transactional, market, reference and third-party data that are distributed throughout the enterprise will require some of the most advanced technical solutions available today. Options may include using enterprise integration software for true federated real-time integration or cutting-edge extract, transform and load routines (with embedded business rules and logic) invoked as Web services in order to seed the dashboard with information from a seemingly infinite number of disparate data sources.

Governance dashboards must support and drive corporate strategy and associated planning. Only by properly defining potent KPIs will it be possible to always know if the business is traveling in the right direction and instill a culture of continuous improvement and accountability. The more accurate the KPI, the better it will aid in achieving the operational excellence of all concerned business units. If KPIs are flawed, the usefulness of dependent governance decision support systems will be greatly minimized. What is not measured properly cannot be improved effectively. DMR

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Corporate Governance and Data Security and Privacy

by williamlaurent

Although the misuse and loss of both corporate and personal data can expose even the most reputable firms to significant legal, regulatory and reputation risks, for years, information privacy in the U.S. has been protected only through an amalgam of narrowly targeted rules governing specific sectors. Although many countries have passed recent legislation to protect data privacy, the American legal system has relied mostly on self-regulation (and oftentimes litigation) to address breaches in data privacy and security – mostly after the fact. However, new data privacy statutes are increasingly being discussed by state and federal legislators across the U.S. If enacted into law, these regulations will have direct impact on a company's data governance policies.

In some industry sectors, data privacy laws have already taken hold. For instance, the health care industry is required to comply with the The Health Insurance Portability and Accountability Act (HIPAA), which governs how health care organizations handle and distribute information on a patient's medical history. In addition, the financial services industry continues to wrestle with the Gramm-Leach-Bliley Act of 1999, which requires affected companies to comply with privacy policies that govern how information can be disseminated within and between banks and brokerages. Lawmakers are paying increased attention to the Personal Information Protection Act, which was recently signed into law in Japan. It will come as no surprise if this is used as a template for future legislation in the U.S. and other countries.

Many senior managers from all business segments still need to better understand the opportunities for improvement in existing corporate data privacy and security practices. This often means taking a more strategic role in championing firm-wide data governance, iteratively verifying that these policies are continually and effectively enforced and in adherence with relevant legal, contractual and regulation requirements. A good data governance policy will enumerate specific business use cases for all categorizations of corporate data access and usage. Such cases will help formulate a unified and well-defined collection of standards that support regular monitoring and auditing. A robust data privacy/security policy will be comprised of many functional components and address the following:

- Access control: Business use of data must be balanced with timely distribution so that access to all information can be managed properly through authentication and entitlement controls, without sacrificing data quality, integrity and completeness.
- Risk assessment: The business value of all information must be benchmarked, along with existing risks to this information.
- Monitoring: All activity on company networks and systems must be cogently monitored, logged and audited for unusual patterns.
- Accountability: Sufficient logs of all network activity must be kept by monitoring processes so that both processes and individuals can be accountable for their actions.
- Incident and exception handling: A chain of command must be put in place for tracking, reporting and responding to security breaches/violations, equipment loss and occurrences of noncompliance with data governance precepts.
- Customer transparency: Customers must be aware of how their data is being protected or exposed to tracking technologies such as cookies or Web beacons.
- Education: All users of enterprise data must be educated with respect to good data security practices. Especially important is a full understanding of company Internet usage policies.
- Dispensation: Occasionally there will be a business requirement for the use of nonsupported firm hardware devices. Such an exception means that the advantages of such use must be greater than the risks of usage.
- Data profiling: It is often prudent to assign various classifications (such as public, confidential or highly confidential) to various strategic sets and collections of data.
- Mobile and remote computing controls: Activity conducted on corporate mobile devices must be tightly controlled. Such devices must also be physically secured at all times, especially when off company premises. Careful attention should be paid to firm-approved authentication mechanisms such as token cards or smart cards. If any mobile or remote communications device that contains (or has access to) firm information resources is lost, stolen or suspected to have been tampered with, management must be informed immediately.
- Architectural best practices: All entry points to company networks should be secured by up-to-date access control gateways with multiple and layered security control points. Intrusion detection systems (IDS) will eliminate single points of (protective) failure, making security breaches less probable.
- Consistency of coverage: Appropriate quality and security controls must be consistently implemented on all business processes and data distributed outside company boundaries.

A cross-company data security policy will help promote the security and privacy protection of all enterprise data. Good data security is part of good IT governance and consequently rolls up to sound corporate governance. Your firm's objective should be to transform data governance from a circus of yearly audits to real-time change-driven processes that will enable you to assess and manage risks in parallel across all business segments and ensure compliance with the regulatory laws of the land. DMR

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The Data Supply Chain

Corporate governance is a wide framework of systems, rules, interfaces and principles that form the basis of fiduciary corporate culture and values. With strategic data as its backbone, these tactical mechanisms help spell out the rules and procedures for making decisions on corporate affairs, enabling you to conform to the internal rules of an organization as well as the larger law of the land. Enterprise data assets must support the rules of governance, not the other way around (with governance initiatives always catching up to or restricted by firm-wide data). Many times, not enough up-front diligence is exercised to bring IT into the forefront of governance discussions. Senior management may neglect to realize how important data assets really are until a mission-critical compliance or regulatory crisis rears its head. While a business can limp around on bad customer and product data, it cannot afford to ignore corporate statesmanship. Poor business intelligence (BI) will put your company at a competitive disadvantage; poor governance could put you out of business. With the harsh regulatory realities of the 21st century, directors are feeling the heat of increased accountability for all corporate actions, large and small.

A value proposition for the data supply chain needs to be thoughtfully crafted by IT and communicated to the entire enterprise so that individuals are motivated to align their data integrity and quality behaviors with the overall corporate good. Accountability for data assets and enforcement of data integrity standards – with palpable *leading indicators* of quality – must be made part of the formal governance agenda and communicated throughout the enterprise and beyond. Just as a flawed part on a factory assembly line will render defective its larger constituent products, the data supply chain is only as strong as its weakest link. Managers must make it a continued priority to pay extra attention to all data sources and feeds that are "external" to enterprise system boundaries. In contrast to your operation, third-party data producers and suppliers do not always have the same values or high standards for data cleanliness, redundancy and consistency of semantics. In fact, service-level agreements with data vendors for all stages of data apportionment (production, augmentation and distribution) are becoming increasingly important as much of the data-providing industry consolidates or picks up new standards. All data needs to be carefully profiled before it persists anywhere in your IT infrastructure. The cost of processing and mining information that supports governance (or any other strategic undertaking) goes up exponentially when the data credibility is mediocre or compromised.

Benchmarks, metrics and calculations for measuring the quality and success of governance rules should be stored as administrative business metadata. In this way, it will be possible to monitor and track the progress of all policy-driven mandates and objectives. Empirical measurements can be taken throughout the data lifecycle to see if the operation of the business is deviating from the governance mission statement. Furthermore, exceptions can be quickly raised and distributed to the appropriate interested parties (such as compliance or legal resources), reducing a multitude of potential risks and exposures across all business processes and transactions. It is better to make data quality and stewardship part of your current governance plan than to wait until you are in the midst of an external audit, subpoena or regulatory action to discover that the caliber of your current and archived data is of questionable virtue.

Data can be one of the biggest limiting factors to achieving robust enterprise statesmanship. Imperfections and faults in the data supply chain must be consciously addressed in all such initiatives in order to keep a company's internal and competitive risks to a bare minimum. Shareholders are demanding that business entities take greater accountability and responsibility for being good corporate citizens. Selling the value proposition for your organization's data supply chain should not be too difficult a task! DMR

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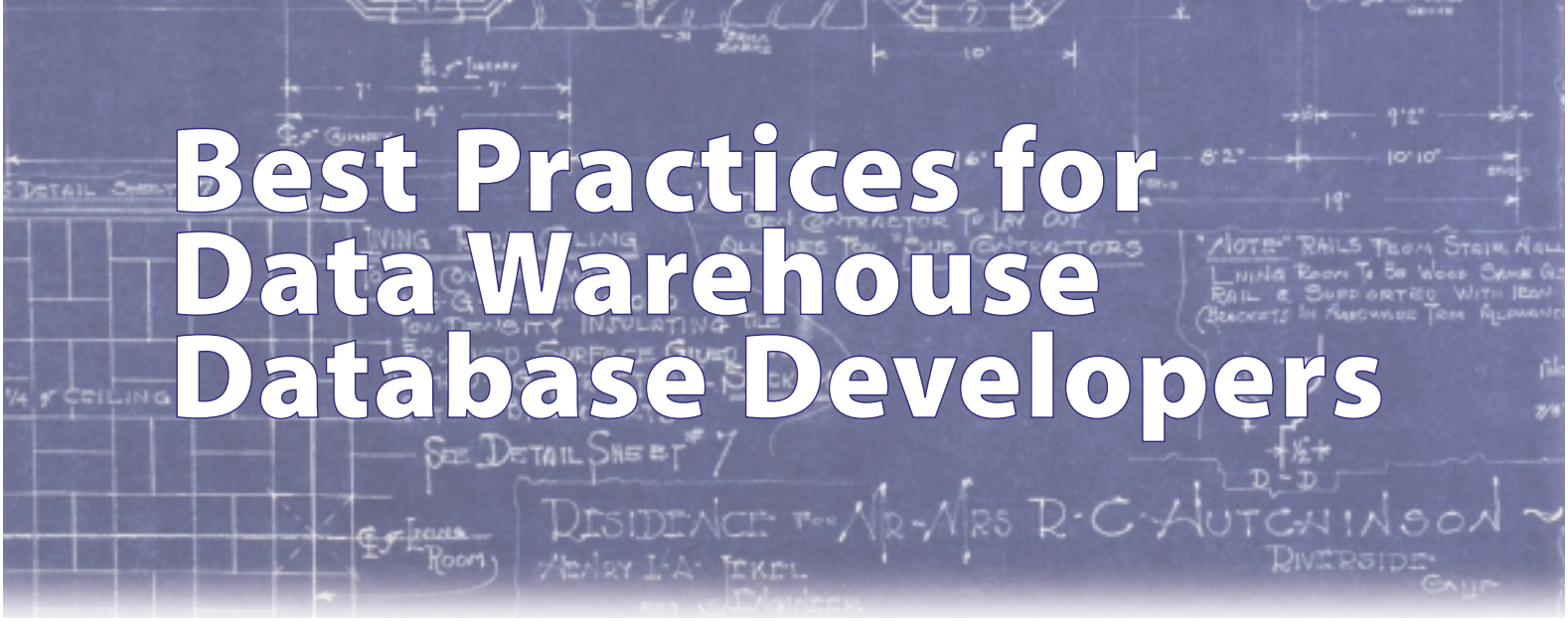

Best Practices for Data Warehouse Database Developers

By Bill Laurent

By nature, data warehouse projects are costly endeavors where many resources are consumed – both hardware and software. Although, experienced database developers may use 90 percent of the same skills on their last projects, they may find themselves approaching development issues differently!

While the project team as a whole usually understands the risks and benefits of building a data warehouse, I find that not enough IT managers are initially aware of the unique challenges a data warehouse effort poses for database developers. Operating in a very large database (VLDB) multi-gigabyte to terabyte decision support system (DSS) data environment will often require unique approaches for database developers, where strategic value can be added to the warehouse development cycle. Understanding and anticipating the kinds of challenges developers will face in a DSS database is essential. This article will address a few of these challenges.

1. Make sure you are provided with a usable data dictionary before starting heavy-duty development. Many data warehouse projects suffer from time constraints, so it is not uncommon for some area of construction on the system database and corresponding development tasks to commence while other tasks in the analysis domain – business user interviews, requirements gathering, source to target analysis, etc. – are still being conducted in parallel. On these types of data warehouse initiatives, the developers seem to be perpetually playing detective – iteratively asking questions about data mapping, validation ranges, aggregation and related semantics during their coding of procedures, triggers, queries, application programming interfaces (APIs), ETL (extract, transform and load) scripts, and so on. While there may certainly be crossover between the gathering of systems requirements for a data warehouse and the construction of a data dictionary, some sort of data dictionary should be in place before any critical coding or database development takes place. As this lexicon of corporate data meanings and semantics grows, the corporate data steward should see to it that things such as rules, validations and domain ranges are added, giving rise to a true enterprise dictionary. The data dictionary should be stored on the corporate intranet and available to both business users and developers alike.

Warehouses that are built without a useful data dictionary will often result in physical functional areas sharing common data elements, duplication of coding effort, increased redundant data and confusion and communication problems for the developers. The data dictionary should be stored in a meta data repository database, and a concerted effort should be made to merge and tie in the information with your ETL tool's meta data (for example, source and target mappings). Developers will be glad they have one place to find mappings, data meanings, validations, domains, aggregation rules, etc. Without an industry standard on ETL meta data, this may be easier said than done; nevertheless, the days of keeping the data dictionary solely in a spreadsheet on a file server should be over!

2. Save query plans, run times and performance benchmarks in the database. Storing processing performance information and benchmarking data in the database can be done quite easily, although it is often an afterthought in many data warehouses. For example, recording a process *start time* and *end time* for every critical batch or processing task in the warehouse can easily be implemented via such things as stored procedures, shell scripts or ETL tool tasks that serve as wrapper or control objects. These process control components become responsible for recording execution and completion statistics as they execute the critical processes in the data warehouse. Why keep benchmarks? Saving benchmarking data in the database helps pinpoint performance problems by establishing foundations of mean/median run times. This helps the team focus on tuning opportunities and gives direction on things such as hardware load balancing, troubleshooting, SLA agreement expectations and facilitates better practices on the maintenance of your system.

Keeping process benchmarks as

part of your meta data is a logical extension of a robust meta data repository, providing information about your warehouse processes – job sequence, parameters, run-times – in one physical place. Remember that meta data should not just be data about your business-oriented data, source target mappings, etc.; it is also *data about your warehouse processes*. You could ameliorate this approach to track user activity, identifying bottlenecks and most-used queries by grabbing statistics on query start and end times, most-used queries, number of reads on the database, number of rows returned per query and more.

3. Save ETL, validation and processing errors in shared database tables. Similar to the previous approach is the practice of properly trapping all data warehouse processing errors in database tables. Nobody should have to wade through error logs and error tables marooned in multiple environments. All errors should be trapped, consolidated and sent to one place – your meta data repository. This means that any errors that occur in the domain of the ETL tool are logged with any errors encountered in the post-ETL tool load process, whether it be from things such as loading the operational data store (ODS) or building the online analytical processing (OLAP) cube. It is important to establish error thresholds for each process in the data warehouse as well as what actions to take when those error thresholds are encountered. This is usually one area where requirements gathering falls short; nevertheless, veteran data warehouse developers will want answers about this information fairly early in the development process. E-mail notification of any errors that exceed predetermined thresholds should be the goal of any robust data warehouse.

4. Avoid long-running transactions. In your online transaction processing (OLTP) applications, you did not have to worry so much about long-running transactions. However, now those data manipulation language (DML) operations on millions of rows may fill up the database's transaction log, bringing your development or batch processing to a standstill. If you are writing stored procedures, keep them modular with respect to each unit of work, and break your transactions into more granular operations. This will also give you more leverage over error failure – as you will have less to roll back when an error condition strikes, and you can isolate your errors more easily. Also, remember that you are dealing with millions of rows. All those long-running transactions may hold locks on precious data, slowing a parallel load of your database to a crawl.

5. Use referential integrity carefully. Beware of the pitfalls of using all the of referential integrity (RI) bells and whistles of your relational database management system (RDBMS); always know the performance tradeoffs with RI. While foreign key constraints help data integrity, they have an associated cost on all insert, update and delete statements. Give careful attention to the use of constraints in your warehouse or ODS when you wish to ensure data integrity and validation. Also consider the advantages of implementing certain types of validations and check constraints in your ETL tool or data staging area. While triggers are a godsend in OLTP, they may slow mass inserts into your VLDB considerably, as every row inserted will fire its corresponding trigger once.

6. Learn to recognize when the law of diminishing returns is in effect. Sometimes "good enough" performance is acceptable. Avoid the urge to perform endless incremental improvements in the optimization of your database code. Many times as a matter of pride or competition, developers try to keep tuning structured query language (SQL) or other code when, in fact, the run times of the current batch processes fit comfortably into existing batch windows. Although, this may be the simplest concept in the article, it remains very difficult for many developers to grasp. Information technology exists to support the business and its processes in a constrained time arena; know the service level agreements you have with your business users and *exactly* what types of improvements will help you meet or keep your acceptable levels of service.

7. Always understand your database's optimizer and query plans. Everybody knows that random-access memory (RAM) access/logical reads are always cheaper than physical disk access, yet I am always amazed at the lack of understanding and attention given to such things as query plans and I/O statistics analysis. All developers writing SQL operations against a VLDB should know how to create and decipher a database's query plan and be able to tune all data manipulation statements for best possible performance. When I encounter a data warehouse schema for the first time and I want to issue a SQL statement, I always try to find out as much as I can about the *nature* (business meanings, storage, indexes, etc.) of the data. Before I execute any queries against the data warehouse, I first compile them and then run them (non-exec mode) with the query plan in effect. Only when I am comfortable that I am covering indexes, issuing the correct joins and getting good I/O statistics, will I execute the query. If I am just trying to get "acquainted" with the data, I will limit my result sets so that only enough rows are returned as to provide me with some clues about the nature of what the data means, in the real world empirical sense. This approach has saved me many trips to the DBA on duty to ask him or her to kindly kill my runaway processes or Cartesian product of the day.

Be aware that some of those DML operations in your repertoire that may have been fine on an OLTP order-entry system may not work in a huge, historically archived database. For instance, if you are now inserting 6 million rows en masse from an ETL tool, you should be aware of the repercussions that clustered indexes may have on your operation – the possibility that your load methodology will require the database optimizer to reorder/split some of your physical

data on *each* insert. Even worse, updating field values that participate in a clustered index may take forever, as each updated row must be physically moved so that its location conforms to the order specified by the index.

8. Know the limitations of your ETL tool. Before you begin serious development with your ETL tool of choice, be aware of all of its limitations and how to work around them. To give an example, many ETL tools require advanced coding practices to go from long flat file structures to various types of normalized RDBMS table structures. Therefore, you may have to output DML from your ETL tool into a SQL-esque log file, parse the log file and then use the parsed file to perform inserts into your warehouse database.

Also keep in mind that many ETL tools – robust as they are – do not have a meta data repository that integrates easily with your enterprise repository, making it hard to change tools in midstream. Never underestimate the integration challenges that may arise when tackling your meta data requirements.

9. Be involved in planning physical environments for testing, QA and migration. Fundamentally speaking, version control and change management practices for a data warehouse are virtually identical to a normal non-DSS environment. Developer access should be restricted to the production database as database code, scripts and objects should be checked from a repository – not just grabbed from production. A much more daunting task is deciding how to re-create the physical data warehouse environment so that developers get a true test and quality assurance (QA) environment separate from production. Given the huge volume of data that a warehouse contains, as well as all the sundry applications and pieces that make up its architecture, this may prove too costly to do, resulting in shortcuts or sharing architectural components between QA, test and production environments. In this case, even more thought should be given to where exactly the developer will be able to develop, perform QA and migrate new code or bug fixes. It is not uncommon for a warehouse project to be very far along before serious thought is given to migration processes and environments in which developers will conduct the maintenance and test of code because the focus tends to be on the production environment. The opposite approach of "cutting over" from development to production can be just as bad, not to mention risky. A savvy developer will start raising questions concerning the need for multiple physical environments early in the project. After all, he or she will be working every day with the physical setting provided.

Bear in mind that I have only scratched the surface of *best practices for data warehouse developers*. IT managers, project leaders and developers who are involved with their companies' or clients' warehousing efforts should become acquainted with these issues and sundry related considerations. While every subtopic listed could warrant its own in-depth article, an understanding of these topics will go a long way to ensure success for database developers in a data warehouse environment.

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Perspectives on Managing an Electronic Document Management Project

by William Laurent

Summary: *EDM systems have certain unique and idiosyncratic pitfalls and issues - from the initial analysis/design to final integration testing and production release - that the data warehousing project management professional should be familiar with.*

Electronic document management (EDM) has become a critical cornerstone of the data warehousing landscape. However, many companies are still undertaking large EDM projects for the first time and finding that seasoned expertise in EDM project management (as well as integration and development) is often not found in house. EDM systems have certain unique and idiosyncratic pitfalls and issues – from the initial analysis/design to final integration testing and production release – that the data warehousing project management professional should be familiar with. EDM systems are usually strikingly different from one implementation to the next, with a changing cast of exhaustive obstacles with each new installation. Although EDM structures may be simple off-the-shelf implementations, they are usually complex systems tailored to reinforce and tightly fit/integrate with a company's workflows and processes. Likewise, system documents themselves may be completely static during their lifecycles, but are more often collaborative in nature (sometimes intensively so), supporting corporate workflow and cooperative tasks. As project manager (PM) you may be tasked with commanding numerous components of an EDM project, which could include elements of training, software, hardware, development, documentation, testing, conversions, support and beyond. Let us look at a handful of the more important challenges that you, the PM, should be ready to tackle.

Setting Expectations and Getting Buy-In

If you are having a difficult time aligning current and proposed technical infrastructure and IT investment priorities with document management business requirements, you may want to consider a hybrid EDM solution. This will be especially relevant if you are already starting with a large body of paper documents that populate the voluminous chambers of the corporate information center. Many times it will not be easy to justify the expense of converting large numbers of archived and/or inactive paper documents (or future paper documents) into digital formats, let alone the cost of the analysis to determine and identify candidate documents for conversion. A hybrid solution – where many documents remain in paper format while other more recent and robust ones are scanned into the repository – may be a good compromise! For hybrid systems that will store a portion of *newly* created documents in paper form, metadata about the new paper documents should still be tagged in the EDM system going forward so that these documents can be effectively tracked and requested electronically.

A huge paradigm shift may be needed in the minds of the targeted EDM user community. You may need to spend time winning their hearts and favorable opinions. Some future users of the system will invariably be upset that they now have to officially check in records or documents to support their business processes. The "big brother" complaint may rear its head, especially if audit reports (which will expose people and processes that are not properly checking in documents as required) are brought into the equation. Conversely, you may find yourself up against a "packrat" mentality: users may be unhappy that certain documents will be destroyed in accordance with a document retention schedule. Fortunately, the case for both retention and destruction of documents is usually persuasive because it is driven not only by core operational needs, but also by internal and external legal and compliance concerns.

A detailed and specific document retention policy should be meticulously crafted and promoted throughout the enterprise so that all employees clearly understand document lifecycles and protocol. This policy will clearly define all criteria and circumstances under which documents should be saved, the retention schedules for each document type, and best practices for check-in and check-out. It will define stewardship, ownership and dependencies of documents. Also

defined will be exception rules and "grandfather" clause exceptions for legacy documents. In addition, it will be important for the policy to list explicit descriptions of what types of documents should not be stored in the system. (For instance, public records and forms that can be freely downloaded from the Internet probably should not be taking up space and have attached metadata in your document management repository.) Once your document retention policy is in effect, enforcing adherence to the policy will be an ongoing mission that will require proper vigilance.

As with any large-scale data warehouse effort, it is vital that all levels of management are on board with their full backing and sponsorship if large EDM endeavors are to be successful. This may be tricky because document management systems and their underlying retention policies (and enforcement of those policies) tend to encroach on people's "turf" by abolishing various traditional management hierarchies, sometimes adding new ones due to additional audit and compliance requirements. Everybody in the company must understand the strategic importance and compelling need for the proposed EDM solution if it is to be an unqualified success.

Business Continuity and Document Security

When paper documents are moving about an organization, it can become very difficult and cumbersome to create a permissioning model that controls and restricts their access. However, once they are converted from paper to electronic format, it becomes much easier to effectively attach access and entitlement controls to the documents and their associated metadata. Because security can occur at the document level, document field level or on a document's metadata, permission and security models can become complex and unwieldy very quickly. Always be sure to define security needs very early in the project and don't make it an afterthought when embarking on an EDM venture.

With paper-based documents, it is near to impossible to *replicate* all files for safe-keeping, let alone employ business continuity (BC) best practices and fundamentals. However, when the same documents are in electronic form, disaster recovery (DR) and BC options are exponentially increased. Typical BC/DR methodologies (replication, redundancy, failover clustering, etc.) will apply to EDM architectures; however, supplemental server infrastructure may sometimes be prudent. For example, it is often wise to dedicate separate physical servers for both document files and document metadata. Supplemental records management software (if needed) may be installed on an additional server.

Systems Integration

For systems that will require legacy conversion of paper documents into electronic format, care must be taken to set aside plenty of time in the project plan for the conversion, i.e., scanning and imaging paper documents into the repository. For some hybrid solutions, paper documents may get physically barcoded and metadata that describes the documents (barcode number, check-in date, etc.) will be entered into the document repository. Well thought-out and defined grandfathering provisions will be helpful in restricting the candidate set for such labor intensive legacy conversions.

Your EDM schema will most likely have points of integration with other systems. Of utmost importance is complete integration into corporate messaging backbones and email applications so that copies of documents can be distributed directly to all data consumers, authors, auditors and editors. This often will involve merging the EDM system with groupware applications or services as other corporate applications will want to check-in, check-out, browse and search for documents. The document repository should have a robust and open application programming interface (API) that supports web service calls and can accommodate intra-application access and collaboration in order to support various sets of collaboration teams in a dynamic, transparent, and flexible matter.

Understand how web services and service-oriented architectures (SOAs) can enhance and integrate with your EDM edifice. With open standards for document library services, users can safely open, edit and save documents from anywhere on the Web, turning virtually any employee into a web publisher. A web-based architecture can provide a scaleable set of hardware and software resources capable of adapting to the future needs of both the business and technology while enabling robust company-wide portal approaches to document data.

Development and Architecture

The PM should control project risk by constantly keeping a pulse on document and metadata retrieval performance at set points throughout the development process and after major EDM rollouts. Updates to a document's metadata may require a re-indexing of the document that could have immediate implications on performance as well as versioning and change management mechanisms. As with any mission-critical system, the quick and speedy retrieval of records helps keep user productivity high and can immediately impact customer service for the better.

Periodically ensure that all document metadata models are robust and kept up to date. All documents in your repository will be indexed with attached metadata, which is often managed and stored in a relational database, parallel to the actual document file itself. Metadata will help identify and track countless document attributes and details and form the basis for advanced document searching and retrieval. Although E DM systems are ultimately likely to be enterprise-wide, business units will need to capture document metadata that maps to their own unique processes; fields used for specialized searching and browsing will differ across corporate functional areas. Different business units will also require different reports about documents. These reports will usually be run from document metadata, not data embedded in the document itself.

Even in this day and age, companies still have valuable unstructured data content that is hidden and locked away in documents throughout the enterprise. A diverse population of document types (from catalogs to reports, resumes to contracts, press releases to meeting minutes, insurance certificates to government permits, etc.) often drive core business processes and are ubiquitous components of organizational workflows. Veteran project managers that understand the specific issues and implementation challenges that are unique to electronic document imaging will be able to better help their firms govern and inventory valuable corporate data assets to the fullest and position all EDM projects for success.

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DM Review

corporate governance

Governance Gap Analysis

by williamlaurent

In every dimension of the financial industry, the regulatory environment is becoming increasingly demanding, dynamic and complex. Global banking and brokerages must not only continue to meet their amalgam of current compliance requirements, they are also obliged to perpetually prepare for an unceasing expanse of nascent regulations and potential new risks.

As increased levels of diligence in governance decision-making and policy implementation are built on top of current enterprise compliance foundations, the discipline of governance gap analysis has gained irreversible visibility and importance. When executed properly, effective governance gap analysis will create real-world value. It will render existing policies more efficient and effective at addressing risks and responding to crisis; perils to business reputation and continuity, from threats inside and outside corporate boundaries, will be measurably reduced.

Governance gap analysis focuses on current corporate governance policies and processes (as well as the technology that supports them) and compares the existing governance modus operandi to industry best practices for companies that are similar in organizational structure, assets, liabilities and business objectives. This gap analysis practice will give an enterprise a clear understanding of as-is realities from which weaknesses and strengths in the governance framework can be assessed. Ultimately, stakeholders can be provided with a platform for effectuating a robust action plan of rectification and improvement.

> When executed properly, effective governance gap analysis will create real-world value.

Gaps are best identified by developing in-depth governance use cases that document and address a gamut of various but relevant possible business scenarios – from operational risks (such as exposure to fraudulent or money laundering transactions) to political risks (for example, underreporting a firm's market activity to regulatory agencies) to litigation risks and beyond. Each use case should enumerate the probability of each projected scenario as well as the possible (or expected) counteractions taken by organizational resources in response, copiously documenting the hypothetical outcomes - both good and bad.

As an outgrowth of the use-case exercise, precise exception/incident management and contingency plans can be formulated and fabricated into the greater body of corporate governance policies and procedures. Enterprise risks or emergencies that may not be handled in a competent and scrupulous way by current operational models can now be righted from both a holistic enterprise and business unit/departmental perspective. Change management roadblocks associated with gap remediation can often be reduced or removed by compellingly communicating the findings of the governance gap analysis to senior management.

A successful governance gap analysis methodology will incorporate best practices similar to the following:

- Develop ROI justification for gap analysis projects by delivering threat profiles in the early stages of such ventures. Threat profiles examine and quantify key enterprise-wide business assets and their associated vulnerabilities to a host of potential hazards. Senior management must be continually educated on risk exposures across all classes of corporate assets and property.
- When closing the gaps in an organization's corporate governance practices, take great care to maintain acceptable service levels and standards of business continuity. Any improvement or remediation plan should assess the business impact of all proposed corrective measures, no matter how small their expected footprint.
- Establish an infrastructure that will allow for the physical benchmarking and measurement of improvements and optimizations in corporate governance. An intelligent information flow structure should quickly (and inexpensively) communicate this information to company directors, boards and steering committees.

While many CIOs understand how to make IT support enterprise corporate governance, the key to success will always be getting people to take collective ownership of the governance agenda, ensuring that everyone is fully aware of the consequences for noncompliance. All firm employees, vendors and consultants must have a solid sense of their roles and responsibilities, reinforced by regular feedback and awareness-building mechanisms. Forward-looking organizations should formally evaluate the board's performance and commitment to the corporate governance policies on a regular basis and incorporate such evaluations into gap analysis practices.

Financial institutions that are true to best practices in compliance and governance do more than satisfy regulators and shareholders – they gain handsome business advantages. In the wake of numerous recent high-profile corporate scandals and increasingly punitive fines and penalties assessed by regulatory agencies and local governments, high-level directors - those who hold the most accountability for their company's actions - should be responsive to the benefits that diligent governance gap analysis provides to the regular fine-tuning of company governance programs. DMR

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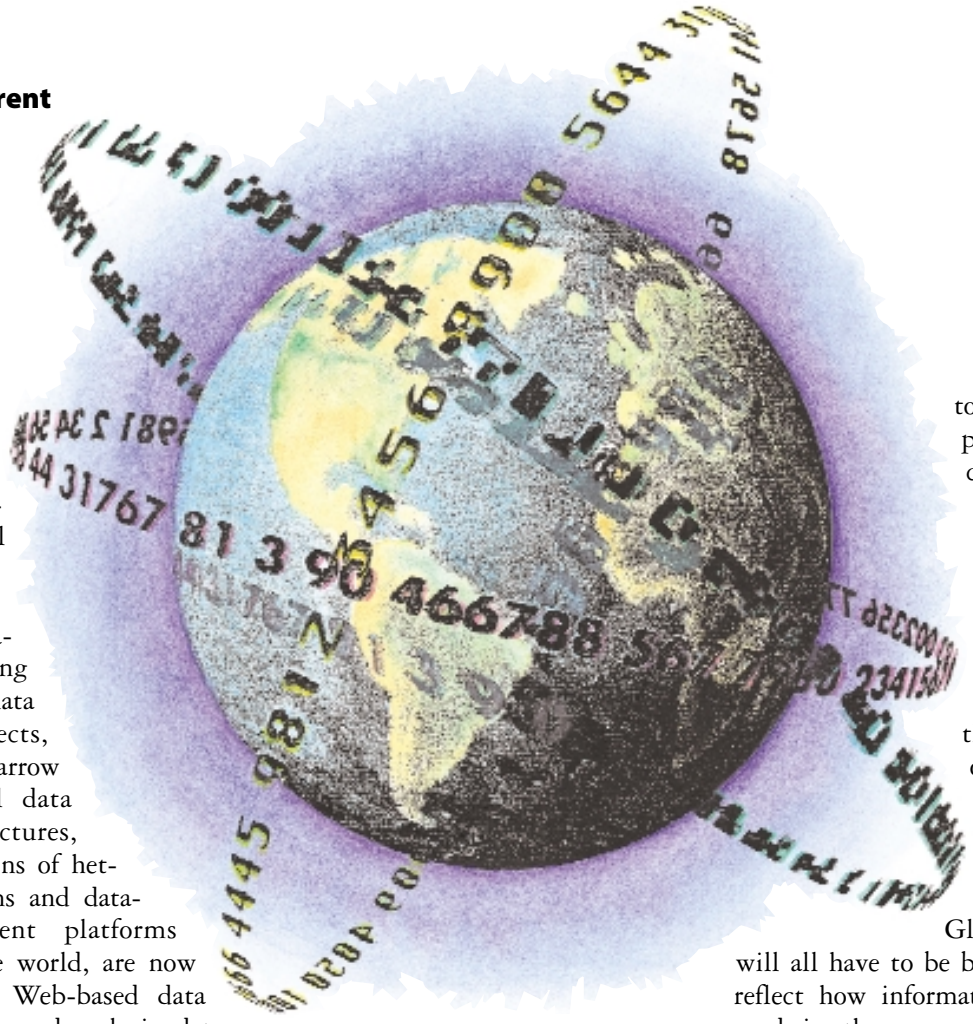
Challenges of the International Customer Data Warehouse

By William Laurent



Currently, most companies with international lines of business, global offices or expatriated operations are embarking on international data warehouse projects, both broad and narrow in scope. Global data warehouse structures, with amalgamations of heterogeneous systems and databases on different platforms spread around the world, are now the norm. With Web-based data movement, mining and analysis, data boundaries have virtually dissolved. The world of data has become much smaller as many of earth's remote areas log onto the Internet for business intelligence purposes. Entities that have expanded into truly intercontinental businesses, with complex 24x7 globally aware data, run the gamut from international manufacturing conglomerates to financial firms to telecommunication providers. Unfortunately, many worldly warehouses and reporting repositories still have hurdles supporting quality global analysis, research, data consolidation, executive reporting and other types of data mining, whether approached from a core business, product or customer-oriented paradigm. The simultaneous distribution and publishing of data to autonomous and far-reaching locations is usually wrought with formidable difficulties. It is important to realize that problems are not only limited to bandwidth and language.

International data warehouse requirements can be extremely diverse. For instance, it must be decided early whether the data warehouse will be primarily for high level decision support reporting or detailed historical data mining and exploration (optimized for statistical or actuarial analysis and drill-through/drill-down inquiries). You must know fully which elements will *drive* warehouse reporting and data dissections – what the patterns of analysis will be. In other words: Will your global data warehouse or repository be geared toward customers, products, financials or other components? There is no off-the-shelf model, database or application that is 100 percent correlative with the warehousing objectives of international businesses and their data distribution needs. Global repositories will all have to be built so that they reflect how information and data is used in the company. An effective international data warehouse will need to reflect and reinforce the core values of the organization itself. Thus, it is a good idea to get a general understanding of some of the pitfalls, problems and possibilities of international data warehousing, before coming face to face with them at crunch-time.

Data Latency

An eye must always be kept on data latency issues; data is commonly created in one location and then synchronized or replicated to numerous locations throughout the world. The more geographically diverse the systems and resources, the more elaborate the complications. Quality and performance controls are a must when trying to keep data up to date and con-

sistent across countless cities and countries. Although more persistent refresh and replication frequencies will shrink latency and waiting periods for data, greater network bandwidth will be used, requiring increased monitoring and performance-tuning tasks. Rugged scheduling logic and checkpoints will be required in order for a round-the-world user base to receive measures and dimensions that are consistent across their organization's divisions.

The Customer

An efficacious universal warehouse will bequeath to every global office an iterative feedback loop that tracks the actions, trends and whims of a company's foreign and local customers. Be it billing, shipping, return authorizations, marketing or other segments – all information from day-to-day business operations will relate back to the customer.

People behave incongruously (eating habits, hygiene standards, commuting trends, banking preferences, etc.) throughout the world. However, the international data warehouse should have data elements that are *common* throughout global locations – ones that track the same granularity, habits, behavior and components of customers. In other words, *all* behavior should be tracked. This is important in order to effectively spot customer trends and differences per localities. Only cross-country reciprocity and parallel congruency of data will give you a true picture of an entire customer base, helping you create strategies for targeted marketing pushes, speeding discovery of cross-selling opportunities, and boosting the conquering of untapped markets. Today everything is intra-country, from airlines/vacation travel to online dating to MP3 downloads. With an integrated cross-country viewpoint, your organization will start to understand why customers behave the way they do.

If you want to capture true global demographic trends and conduct serious business intelligence (BI), avoid making the mistake of having one warehouse per country or continental region (stovepipe). The goal is to have integrated data from around the world. Robust product lines will always straddle two or more continents, time zones (see Time Zone Issues section), currencies, regulations, etc. For example, a single ocean cruise excursion may encapsulate all of these characteristics in a single day's journey! It is vital to the spirit and architecture of the international data warehouse that shared global data is channeled into a primary repository. From here, all interested parties can be methodically provided with valuable data (via data marts aggregated along country lines and so on) for everything from high-level analysis to customer calls.

Time Zone Issues

International data warehouses require thorough and carefully planned time zone management because most enterprises span multiple zones. As data is synchronized, scrubbed, transformed, distributed and shared, data elements will invariably get out of phase with respect to time. As physical distances increase, problems with real-time and batch synchronization can increase exponentially, meaning that time zone problems need to be addressed in distribution schedules, data models, data storage and replication/integration plans.

Time stamping strategies are often the best methods to use in order to overcome problems of time zone processing differences, lending a helping hand with tracking when a transaction occurred or became valid/invalid. It is not uncommon to use three or more time stamps in order to track data movement from the main repository back to the source systems of record. For contemplation, consider the following time stamp fields that may occur in a warehouse fact table that models global transactions: *add_timestamp* will capture the local time zone date/time that the transaction was added to the main warehouse; *batch_timestamp* will capture the time zone date/time that the batch that loads the main warehouse started; and *source_add_timestamp* will contain the time zone date/time that the transaction of record took place in the source system. This sort of approach can be extended, scaled up or scaled down. Most financial measures should have multiple time stamps, or multiple surrogate foreign or primary keys that connect back to a verbose DATE/TIME dimension table. This table will track many things beyond simple date and time constructs. Holidays, Julian dates, days of the week and financial quarters can all be included in the mix. You want to avoid complicated SQL commands when navigating through layers of time, implementing most of this time stamping and date calculation logic during ETL extracts, not during end-user queries.

This is complicated, and this article covers only the tip of the iceberg. International time zones are terribly problematic. There are countless geographic regions with distinct time zone rules; even in the U.S., parts of Indiana and all of Arizona do not recognize daylight savings time! Today, many companies that want to cut offshore risks have implemented "near-shore" alternatives in places such as Canada, where customer service remains in the same language and time zone as corporate headquarters.

Currency Concerns

Financial data will be a common denominator for your organization at every global branch or office. Money will always be a *common measure* to all corporations worldwide, and tracking the historical movement of money will prove to be a major challenge. A truly global data warehouse will require careful attention, translation, measurement and adjustment of many different currencies in both data and budgetary realms. Therefore, a data steward is required – one who has the power and means to enforce all enterprise data standards, locally and internationally. Most high-level executives will want to see reports that track profitability of products and services across warehouses, business divisions, suppliers, customer demographics and more. Once international demographics and global supply chains are introduced, old ways of slicing and dicing financial-oriented data may become irrelevant. An effective data warehouse

project leader will be able to spot potential caveats, such as new layers of financial measures or dimensions, and instruct warehouse modelers and developers as to the appropriate actions required to manage these kinds of changes.

Because currency exchange rates fluctuate on a daily (minute-to-minute) basis, clean and easy apples-to-apples comparisons of U.S. dollars to Euros or Yen may not be possible, especially with systems that deal with data on an intraday basis. Tracking the profitability of products in varying markets will fall short of expectations unless data stores and currency tables that contain detailed exchange rates and valuation dates are properly integrated into the general warehouse or operational data store. Users will want to see the base currency and "home currency" for each transaction. Many currencies will be tracked against other currencies – the simplest being home currency versus the single currency of the trade/deal/transaction – using parallel fields for each denomination in the appropriate warehouse tables. Thus, if a transaction took place in Japan (in Yen), multiple fields that represent the event would have both U.S. dollars and Yen denominations that communicate up-to-date or restated exchange rates. Be aware, however, that the location of the transaction does not always unequivocally define the currency of the transaction. Many financial events such as currency swaps and spots will fall into this category, making it more laborious to correctly portray the financial picture of your business.

There is another project management issue concerning currency that is often overlooked. Once an agreement is made about which profit center (or whose budget) will fund the international data warehouse, managing and tracking the costs of the warehouse project may be done in multiple disparate currencies. This scenario can sometimes turn ugly. Your team may complete the specified work under budget or be way over budget depending on the currency "pegged" to your individual project components. Exchange rates are volatile and can move in either direction quickly. On large projects, it may be a good idea to limit risk by hedging your project budget – procuring *future* or *forward* contracts in the currency of relevance. Also, make sure the accounts receivable department knows the exact exchange rates when bills and expenses for the warehouse project are paid to vendors locally and abroad.

Cultural and Country Conundrums

Be aware of cultural and language inconsistencies and barriers; they will constantly affect how your multinational data warehouse is configured, managed, implemented and maintained. Language and cultural differences will many times vary from place to place. You will sometimes be carefully managing collaborations where lack of intellectual property laws, the dearth of English language skills, and different legal and regulatory environments are certified project risks. Unique permutations of job roles (from liaison to translator) will exist; you must quickly come to know your data audience and the language ability of users in each data stream. Hence, one can see the wisdom of a sophisticated meta data and data dictionary plan. Will your home office be able to effectively communicate data with rest of world and vice versa? To make these projects successful, there must always be a home base presence on site that can steer service level agreements and make sure ISO 9000/9001 certifications and standards for measuring quality in all areas are in place and being met.

There will be predicaments to face while maintaining enterprise-wide data quality in any single language. In systems that are unable to recognize international characters, the inclusion of non-native data can give you unexpected results and undermine existing data integrity throughout the enterprise. Extensive requirements for ETL transformations may be the norm in such situations where intense language barriers and substantially heterogeneous systems implementations exist. Tools should support the full Unicode standard character set, defining many of the world's languages in a single file and encoding scheme. Both Unicode and double-byte characters must be understood. If your data is sourced in Asia and the Middle East (where multiple character encodings are prevalent and localized language and data requirements vary dramatically), multicharacter support is necessary. Data warehouses must support the Unicode standard and allow for cultural variations in the data.

Language and semantic issues will abound in applications (user GUI and programming logic), models and data elements. Financial analysts, manufacturing resources, distribution and retail employees will all be talking differently about the same products, methods, customers and other concepts. They will be using different measurements to describe product units. The manufacturing people will want to see the universe in pallets, distribution may wish to view data along the lines of various sized boxes, and retail clerks only see things in individual pieces that they can scan. Firm-wide data standards and nomenclature, enforced by an international data steward, must be established. Showing quantified product facts in a single standard unit of measure will be important. One possibility is to build data marts with the local unit of measure from conversion formulas built into fact tables residing in the data warehouse. It is important that applications have a consistent way to convert shared data into specific and idiosyncratic perspectives. The key is to give the users the ability to share the same core information, and then let different business units (marketing, customer service, operations, etc.) use that information – but in different ways – with different patterns of analysis, slicing and dicing.

You will also have to deal with corporate political issues – autonomous global offices may not eagerly follow corporate standards or best practices. These locations may not want to allow direct access to "their" data. When shared data definitions are proposed, problems could ensue and standards may never get promoted. There may have to be layers of meta data – centralized meta data

and local meta data. This will impact implemented architectures, as important yet basic units of measurements will differ.

If your data warehouse has infrastructure components that are far offshore – in a less developed country – you will have to make sure you can quickly procure network and systems hardware and software in a jam. Will what you need be available as soon as possible and priced competitively? All licenses will need to be valid (legal) and current in order to get continual just-in-time support. Also, political considerations must be noted. In many countries, there tend to be headaches with hardware and software consistency. Prices and support for both software and hardware may fluctuate greatly due to price and import restrictions, and changing laws and trade agreements can affect the availability of software modules and hardware.

You want a solid return on the investment in your international data warehouse. Often, you can build on top of existing systems, incorporating a mix of legacy systems and components into the shiny and new consolidated data warehouse infrastructure, offering (within budget) flexible real-time data mining and analysis to user communities around the planet. With proper analysis, design, implementation and risk management of the global warehouse, you should have a system that will not only provide the organization with sound data on all aspects of its business, but one that will help shape critical enterprise decisions and future core company values.

William Laurent resides in New York City and is the executive vice president of Loyer TCG where he leads the company's newly founded data warehousing practice. Laurent has a diverse systems background, successfully designing and managing the implementation of projects for the insurance, banking, finance, publishing, government, technology, entertainment and hospitality industries. The author of several white papers, he continues to be in demand as a data warehouse architect and lecturer. Laurent would enjoy receiving your comments, ideas or inquiries via e-mail at blaurent@loyertcg.com.

More than Risk?

A GRC convergence provides a holistic approach to solving business problems

BY WILLIAM LAURENT

GOVERNANCE, RISK AND COMPLIANCE ARE MERGING OR BLENDING TO OFFER global enterprises a holistic approach and expansive frameworks to tackle business problems that are closely related (but may have been treated as individual silos in the past). GRC derives strength and veracity from the fact that it can be applied in a customized and targeted fashion to various business segments and perspectives, yet also can account for the interconnectedness of agendas. As more attention is paid to perfecting corporate performance measurement and risk mitigation, operational transparency and accountability are not always increasing as expected. However, GRC promises a more integrated and standardized approach to performance management and a better means of achieving a measurable improvement in accountability. It represents the next logical step in helping companies envision and treat their governance and qualitymanagement problems. With GRC, the sum of the parts becomes more effective than an often myopic focus on the individual components, which are often siloed further by business unit or department. Furthermore, currently accepted methodologies are scalable both vertically and horizontally - that is to say, they will be effective for companies of all sizes and can be applied across all strategic and operational lines of business.

The most commonly accepted approaches to GRC have emanated from the Open Compliance and Ethics Group, a nonprofit organization that has reconstructed the governance, risk and compliance regimens into a unified framework that is both intuitive and effective. According to the OCEG, "Seeing the big picture helps you eliminate overlapping activities and develop a stronger, leaner risk management program." Indeed, the OCEG Measurement and Metrics Guide has become an important asset in aiding organizations all over the world to better understand, report on and rectify gaps and issues with respect to each piece of the GRC whole. Taking inspiration from OCEG, software vendors (especially in the ERP and enterprise resource management space) have been quick to adopt the GRC lexicon and offer products that help streamline and improve these areas. For example, some of the world's largest software vendors have achieved great success in centralizing their clients' GRC data via repositories. These repositories centralize corporate policies, regulatory mandates and performance management routines, and sometimes let external customers (who participate in a complicated supply chain) access this data, making them active participants in the GRC process. This helps reduce liabilities throughout operational lifecycles. The ability to automatically spot business process risks and home in on compliance violations across organizational units frees senior management to concentrate on pressing marketplace opportunities and spend less time reacting to endless financial, legal, compliance and governance obstacles. A solid GRC infrastructure should offer real-time data and the ability to aggregate and pivot on different classes of GRC policies. As with any performance management paradigm, a clear roadmap of sustainable improvement must emerge from the chaos. It is important that GRC intelligence is timely, repeatable and represents the real-life picture of how a company is positioned with respect to both the regulatory environment and the global marketplace.

GRC often gains initial momentum in an enterprise due to its special diligence around risk. For many new to GRC, its most important ingredient centers on risk intelligence and how risk analytics and reporting can drive risk modeling and performance management. While governance and compliance agendas are rooted in concrete policy and audit controls, risk is an ever-changing animal that may depend on a wide variety of factors. Modeling risk is as much art as science in many cases. Having a platform that is able to address, classify and relate risk to other disciplines or silos is vital for maintaining competitive advantage and achieving operational consistency and continuity. The GRC platform will include risk modeling, risk charting, visualization, performance metrics and management capabilities that will be materialized into an executive dashboard or portal.

The recent turmoil in the world's financial markets is assured to result in new regulatory and compliance legislation and light a fire under organizations to better account for all classifications of risk. In fact, Forrester Research predicts that the GRC platform market will expand to more than $1 billion by 2011. As vendors continue to offer more scalable and detailed GRC functionality (that maps appropriately to underlying GRC methodologies such as those from the OCEG), these platforms and systems will inevitably mature to a point where adopting organizations will be able to more quickly achieve ROI on corresponding implementations.

More than ever, businesses need to analyze and socialize their internal- and external-facing risks and controls along every possible dimension of exposures, liabilities and perils. Unearthing and disseminating this information will continue to be a challenge for most organizations despite the increased awareness of the role risk and compliance management plays in the overall survival of a business entity. //

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Green Intelligence

By William Laurent

Corporations all over the globe are finally starting to wake up to the promises of green business intelligence (BI). As large and small enterprises fine-tune their governance initiatives, they are noticing much room for improvement when it comes to being a better corporate citizen. In the coming years, the ability to conduct an environmentally sustainable and eco-friendly business will be a primary means to bolstering the corporate governance portfolio. Green BI will be a key driver and strategic enabler in helping companies achieve a lessened environmental footprint and be perceived as an eco-friendly entity. Green BI concepts should not be new to anybody; for years, manufacturing companies have been going green by using intelligent methodologies and technology to measure and improve their raw waste output and report emissions compliance to regulatory agencies. However, green BI promises to give the business community an increased level of control and intelligence into the consumption and waste patterns of all aspects of their business - a paradigm shift that is being welcomed by customers, government agencies, community activists and shareholders alike.

In the last few years, the green IT movement has proven to business leaders and policymakers that environmentally friendly initiatives not only help reduce the polluting and consumption footprint of private enterprises and government organizations, but they also result in cost savings when implemented correctly. As would be expected, the virtualization and smart consolidation of data center infrastructure and business processes can help generate cost savings and productivity gains by orders of magnitude. Large Fortune 1000 companies have reaped enormous rewards with the consolidation of data centers and call centers. As a consequence, BI vendors are starting to catch on that these previous green IT successes can be leveraged to sell green BI solutions to shareholders and management. But green IT is *not* green BI per se. We must go further with our cycles of measurement by augmenting corporate knowledge factories with new lower-level eco-dimensions that will help organizations report on (in a standard, repeatable fashion) and improve their understanding of sustainability factors.

Green BI provides an unprecedented window into previously untapped areas of cost savings and potential profit. Green BI's value proposition, although quite holistic, should be easy to grasp. By carefully measuring the environmental and social performance of a company in tandem with the economic performance, competitive advantage can be augmented and revenues can be increased. Looking at things from a best practices approach (specifically Control Objectives for Information and related Technology [COBIT] and Information Technology Infrastructure Library [ITIL]), green BI can drive value innovation by creating new opportunities or modifications to consumption patterns and habits. For example, with the right mix of quantifiable data and business rules, organizations can gain detailed insight into the most granular components of a product's manufacturing and supply chain as well as its consumption lifecycle. Despite the mature manufacturing processes found in most industries today, immense opportunities still exist to reduce waste and save money in packaging and distribution of countless consumer products. Armed with green intelligence, organizations can better plan and execute programs and initiatives to reduce the amount of waste required to create, market and distribute their products. In addition to environmental factors, they will be better able to focus on how human resources are utilized in the production and distribution of goods. By measuring and reengineering business processes from a sustainability-driven mind-set, companies achieve something which I refer to as "green innovation." Although usually driven by sustainability and corporate bottom-line concerns, green innovation can benefit consumers and clients as well. When companies learn how to reduce wasteful packaging and waste byproducts, they are able to pass cost savings on to their customers. In this spirit, it becomes easy to discern how green innovation can help manufacturing conglomerates capture more market share and win the loyalty of new and existing customers.

Green BI will be the primary means of providing an acceptable transparency into corporate consumption and waste patterns throughout all major business processes, whether they are operational or manufacturing-based in nature. Only through such transparency will organizations be able to demonstrate universal compliance and adherence to an environmentally friendly business agenda as well as uphold their lofty promises of sustainability while cultivating benevolence for natural resources. Put simply, green BI will make companies run better, smarter and cheaper, as sustainability management initiatives will, by default, drive the reengineering of business processes (both logically and physically) and the consolidation and virtualization of burdensome infrastructure. BI systems that produce green intelligence do not have to be thought of as cost centers or drains of corporate revenue. With green intelligence, enterprises will finally have domain knowledge that enables innovative measures of conservation-focused cost savings. In addition, they will be able to proactively address future environmental regulations and standards at local, state, federal and international (treaty) levels. Green BI helps extend and supplant many traditional ideas of what constitutes corporate governance now with what it should be - and will be in the future. In this day and age of eco-consciousness, having an environmentally friendly corporate image (backed up with empirical evidence, thanks to green BI and sustainability reporting) is an asset of priceless value.

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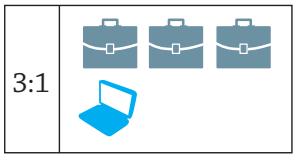
The Latest Adventures in Know Your Customer

Financial institutions must do a better job of integrating KYC with other compliance efforts

BY WILLIAM LAURENT

THIS YEAR HAS SEEN A STAGGERING AMOUNT OF PRIVATE WEALTH COME under the intrepid scrutiny of the U.S. Department of Justice. Just consider the following example: in a much publicized effort to crack down on tax evaders in the U.S., the DOJ served a summons to one of the most powerful Swiss banks, alleging that the bank has aided moneyed Americans in hiding approximately $20 billion in undisclosed offshore accounts.



In an initial settlement, it was agreed that the bank would pay a severe penalty (upwards of $800 million) and turn over the identities of hundreds of clients suspected of U.S. tax evasion via secret offshore accounts.

In the latest salvo from the DOJ, a pernicious civil lawsuit was filed against the bank, seeking the identities of more than 50,000 account holders suspected of hiding $15 billion in taxable assets with the help of the bank.

Thus, in a turn of events that would have been shocking a decade ago, one of the world's largest wealth management firms finds itself risking criminal charges and all future business in the U.S. unless it complies and satisfies the informational requests of the U.S. government. Given that all banks doing business in the U.S. are expected to know their customers, it is not acceptable for it to claim that it does not know the beneficial owners of tax-evading accounts, and thereby refuse that information to law enforcement authorities.

While critics of the U.S. government may bemoan the long reach of its regulatory tentacles, the truth is that governmental authorities and international policy-making bodies have been blasting away against the firmaments of offshore tax havens and banking secrecy laws for several years. A case in point is the emergence and effectiveness of the G7 Financial Action Task Force (FATF).

As global law enforcement has become sophisticated in its fight against terrorism, corruption, money laundering, illegal goods and substance trafficking, the bulwarks of banking privacy have weakened. Since the September 11 terror attacks, international banks doing business in the U.S. have come under increased armtwisting from policymakers and regulatory bodies to conduct more effective due diligence on their customers. By necessity, these banks now usually have teams of compliance pros working on know your customer (KYC) efforts to make sure that the owners of private bank accounts are not terrorists, money launderers or the like.

There is a flip side to risk management in international banking. Effective due diligence should never been seen as a purely compliance-focused task; instead, it should be viewed as an opportunity to better service and anticipate the needs of customers as well as develop new ones. Business intelligence, driven by customer demo-

graphics, will add value to all facets of corporate operations - from better supporting the sales and marketing processes to streamlining all product and service supply chains. Your organization should view KYC costs as strategic investments that will pay rewards across numerous business segments. The benefits of an up-to-date repository of robust customer reference and transactional data tend to materialize fairly quickly, provided an adequate data mining infrastructure is in place.

Ironically, the Swiss bank under investigation by the DOJ had reportedly expanded their KYC and anti-money laundering efforts. Yet its KYC practices did not do enough to prevent bankers from garnering handsome fees in exchange for advice that directly resulted in clients acting illegally and evading taxes. While they may have had considerable information about their customers, they did not grasp the bigger picture. At the time of authorship, nobody can say for certain whether there was widespread and institutionalized wrongdoing at the bank or if a few rogue bankers were responsible for this epic scandal. Although the bank confessed to gaps in their compliance efforts, they refuse to admit to any wide-scale fraudulent or illegal practices.

Nevertheless, the damage to the bank's reputation has been severe, and its future viability in the U.S. has been considerably periled. High-wealth clients have been burned by following bad advice that was too good to be true. In the short term, potential customers with lofty net worth will invariably do business with competing investment banks and money managers.

KYC initiatives and customer profiling were not enough to avoid a catastrophe for the bank, its shareholders and its customers, which included the Swiss government. The lesson learned for large global financial and banking institutions is valuable: they must all do a better job of properly integrating KYC with other compliance efforts, thoroughly mapping them to the regulatory demands of all foreign jurisdictions where they transact business. In doing so, they will also serve the core motives of customer acquisition and service.

KYC will be marginalized unless internal compliance processes are audited on a regular basis so that any rogue activity is spotted and corrected. With the risks of not effectively performing due diligence on one's banking customers so irrevocably publicized and socialized, a KYC audit may be an immediate necessity at your enterprise. //

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DM Review

data governance

Corporate Messaging Governance

by williamlaurent

For many organizations, email messaging serves as the primary means of communication and dissemination of corporate records, both internally and externally. With ever-expanding volumes of email content coupled with the clear and present danger of electronic mail abuse, the challenges that corporate and IT executives face with their current email messaging infrastructures are daunting. Although email governance now has raised visibility in all competitive corporations, the focus is often myopic and fails to properly set forth authoritative archiving rules for corporate records. While corporate diligence on improper email etiquette is high (via quarantines and restricted content lists), the risks of weak email retention policies may not be properly addressed or understood. Well-founded email archiving and retention policies will lend more credibility and robustness to numerous corporate governance and compliance initiatives. In addition to the most visible regulatory mandates such as Sarbanes-Oxley and HIPAA, recent state-level legislation may require the retention of email for prescribed periods of time, serving up a host of new compliance challenges, with laws differing by state and industry. Because of the complicated regulatory climate, there is a high level of variance inherent in email governance best practices from company to company.

All IT managers would very much like to reduce the resources used to archive and retrieve corporate email; however, until knowledge workers are able to better prioritize and classify their emails by various predefined dimensions (such as user, topic, size, number and types of attachments, etc.), such resource reduction will be nearly impossible. Exacerbating common classification problems, many departmental email servers are configured to forever keep copies of all mail that proceeds through the system, creating storage and versioning problems, as emails may begin to reside in different native formats over time. A common counter-reaction to email overload is placing a dedicated delete policy on employee inboxes, thus relying on the user to properly back up and archive their emails and attached records on a "safe and secure" networked storage area. However, this "managed folders approach" can put too much responsibility in the hands of the individual email user (who is already overloaded with email content) and allows for mission-critical and sensitive emails (and their attachments) to get deleted and lost before they can be archived. Other problems may arise when electronic mail users choose to use their email account as a virtual file server, never properly storing mail-attached documents in a safe place because they think they can always access them from their account on a mail server. Retention concerns become more complicated when employees or consultants use personal computers or mobile devices that cannot be easily monitored and controlled by IT administrators. As enterprise messaging expands to include things such as instant messaging and other forms of mobile communication and collaboration, retention policies start to quickly break down. It is very difficult to know what is leaving organizational boundaries (possibly valuable intellectual property) by electronic messaging means, let alone save it in accordance with an archiving schedule.

Often the need for expertise in retention and electronic discovery does not arise until an unexpected audit or legal action occurs and it becomes apparent that the infrastructure does not provide easy and targeted retrieval of the documents that are sought. Emergency requests driven by a firm's legal department will invariably cause a good deal of scrambling by both IT and compliance managers in order to discover or reconstruct information that has often been buried within backup tapes, or worse yet, destroyed. Make no mistake about it, assisting counsel with litigation discovery and developing models that detail the period of exposure (i.e., turnaround time and operational costs) for satisfying these discovery requests is something IT managers are asked to do more and more frequently.

The best technology solutions will automatically categorize and lucidly organize email in physical/logical folders or classes of compartments, taking advantage of recent advancements in data and network virtualization where possible. Technological side benefits of such a solution will allow companies to shrink the size of their email archives and eliminate redundancies in message content; storage management costs will also be summarily reduced. At the solution's core will be a distributed Web-based application that will allow for intuitive keyword searching, quick discovery and indexed retrieval to solve the most vexing of compliance and regulatory inquiries and dynamic audit events.

Like all governance efforts, IT and the business must work in tandem to identify responsibilities as they pertain to content vulnerabilities. Just as executive management and legal personnel need IT's help in realistically understanding retention technology capabilities, IT will require clear guidance on what system controls to implement per corporate document retention policy. Companies must have the collective will to discuss and prioritize email governance issues and be proactive in addressing retention policies before a legal action or unauthorized dissemination of classified information puts the enterprise at a competitive disadvantage. Most importantly, employees company-wide must be familiar and comfortable with general email and document retention policies if such directives are to achieve uniform success across the enterprise. DMR

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DM Review

corporate governance

Protecting Your Online Reputation

Admit it: You occasionally run a Google or Yahoo! search to uncover what people are saying about you or your business on the Internet. Personally, I am always on the lookout for public opinion concerning the content and articles that I regularly write. For an independent consultant such as myself, a simple Internet search a few times a year is sufficient to capture the relatively small number of appraisals scattered over the Web. However, for larger organizations, safeguarding a reputation online is a much more arduous undertaking. The larger the company, the more at stake: Respected and trusted brands take years (and often millions of dollars) to cultivate. And yet, a few commentators in a social media venue – such as a blog, forum, discussion board, YouTube video, publicly available wiki, etc. – can literally make or break a product or brand in a matter of hours. At any moment, somebody in cyberspace may be critiquing your business, compromising the privacy of its executives or having impassioned discussions on how your company's goods and services fare in comparison with the competition. By necessity, companies have started to rely heavily on dedicated software to help with their online reputation management activities. ORM software gives companies of all sizes the ability to track and monitor the Web across multiple search engines, blogs, newsfeeds, etc for mention (good and bad) about their business practices and products. Because knowing in real time exactly who is praising or pillorying your company can result in tremendous competitive advantages, ORM has become an essential part of everyday operations for even the smallest of organizations.

Establishing a methodology for managing and protecting one's online reputation can appear formidable at first. There are seemingly limitless numbers of social media and social content sharing sites, news portals, industry journals and other online media, making it very difficult to uncover everything that the Internet community is saying about your organization, let alone try to manage and respond to both negative and positive mentions of products, services and brands. Fortunately, ORM applications and associated automated dashboards can provide comprehensive ORM capabilities – through comprehensive searching ("deep Web" scouring), analytical/trending, sentiment ranking and customizable alert functionality against all types of online content – from YouTube videos to blogs. The most advanced ORM applications employ *sentiment tagging* functions; these functions are able to intelligently classify Internet statements into *positive sentiment, negative sentiment* or *neutral sentiment* buckets. Furthermore, these ORM tools have the capability to search and analyze data across a diverse breadth of demographics, geographies and languages, which is extremely important for organizations that have to manage reputational risk on a global basis.

In order for any ORM tool to achieve its full effectiveness, a large portfolio of key performance indicators and metrics must be carefully established. Hostile and friendly trends must be consistently captured and analyzed so that reputation management becomes less of a reactive exercise and more of a proactive one. Complex comparative metrics must be commonplace, such as those that help track the success of a brand's reputation over time, or correlate the relationship between volume of conversation and brand reputation, and so on. In tandem with coherent and actionable metrics, a repository of reputation management data will need to be maintained. The repository should archive history in such a way that reports about online threats can be recreated well after the incident has been first spotted. (The Internet has a tremendous rate of change; any aspersion appearing on the Web can disappear almost immediately after it is identified.)
A well-structured rapid response team that is responsible for identifying and rectifying online threats to reputation will be critical to your organization's ORM strategy. An effective RR team will be headed by a *brand evangelist* (an increasingly visible position in customer-centered firms) who understands the value proposition of the company's core products and brands. The brand evangelist's team will have a playbook, or set of operating principles that formalize how to classify and react to various types of online reputational threats, to turn biting consumer criticism or belligerence emanating from the Internet into opportunities to win over existing and prospective customers. Moreover, resources from an organization's legal and compliance department will be integral to the team's success, with their ability to execute cease and desist letters or provide extra muscle in negotiating a final resolution when a website's content is deemed to be slanderous or libelous.
Maintaining a blog is a surefire way to elegantly acknowledge and address online vitriol aimed your organization. Within the confines of the blog, a brand evangelist can explain what his or her company is doing to correct any consumer issues, clear up misleading rumors in the press and much more. What is important is that organizations indicate a willingness to listen, to resolve complaints that originate on the Internet in a personal manner, over the phone or email, "offline" and off the record. A customer-focused blog, authored or edited by a persona that the public readily associates with a brand or product line, will align corporate marketing and sales strategy with customer service operations in ways that create tremendous value for all. DMR

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DM Review

corporate governance

Outsourcing Governance

by williamlaurent

Twenty-first century market dynamics continue to dictate that companies of all sizes consider outsourcing vital operational services and IT processes. Unfortunately, many organizations are not paying enough attention to the multitude of new risks that inevitably surface with the outsourcing of increasingly complex business processes and data supply chains. Today's businesses must constantly engage in concentrated risk mitigation and liability management – especially as it relates to diligence in corporate governance practices and compliance with the laws of the land. Significant new regulatory requirements such as the Sarbanes-Oxley Act implore that companies closely scrutinize any business or data procurement processes that may affect corporate financial controls (and the accountability of those controls). As a result, enterprises need to make sure that their current and prospective outsourcing vendors strive to:

- Satisfy all current regulatory and compliance requirements that may affect the relevant business spheres of a client and, specifically, the business areas that drive the processes and functions being outsourced; and
- Have in place appropriate internal governance controls and policies. A service provider's stated commitment to quality management may imply solid corporate governance; however, specific credentials should be well documented and made available to prospective strategic partners.

If an external vendor is managing operations that have a bearing on a company's financial controls or business quality methodologies such as ISO and GAP standards, lack of attention to a client's compliance requirements can quickly cause severe problems for both companies. (The reality is that outsourced IT and data services often touch upon the boundaries of their client's core books and records, from accounts receivable to billing and beyond.)

Sourcing governance – confirming that outsourcing companies meet not only functional service commitments but also a plethora of desired regulatory and compliance standards – has become more visible and important to organizations. Executive audit committees (often overseen by or composed of board members) are finally beginning to understand their fiduciary responsibilities with respect to IT governance – specifically as it relates to outsourcing vendor management and outsourced service procurement. As part of the overall corporate governance policy, audit committees should identify, categorize and evaluate all outsourcing risks and promote governance best practices in order to manage these risks. Many corporations now mandate that outsourcing vendors meet minimum thresholds for financial stability, size, and internal control and compliance infrastructure – which could mean that they have implemented Common Maturity Model level 5 and Six Sigma standards. Such demands are usually made implicit on contractual agreements and should withstand all varieties of internal and external audits as well as the toughest tests of transparency.

The chances of running afoul of regulatory and compliance mandates due to the actions of an external service provider will drastically decrease when the outsourcer and outsourcee see one another as strategic partners who share symmetrical investments and similar risks. True strategic alignment means that both sides are willing to continuously refine and improve service level agreements on a task-by-task basis over the life of the partnership, engaging in constant dialog about how objectives in service delivery and costs are being met and measured against all strategic and tactical goals. Robust communication channels will cultivate a mutually beneficial and high-trust relationship where governance principles are shared both inside and outside the scope of service contracts. The value proposition for effective forums of information sharing and collective decision-making is obvious: improved service supply chains without concurrent increases in expenditures. This can only be accomplished by common understandings (logical and physical) of how to monitor, manage and measure not only deliverables and service levels, but also the degree of adherence to agreed-upon compliance and regulatory requirements as well as the ongoing identification and mitigation of all associated risks.

Just as outsourcing relationships rarely bear the fruit of immediate cost savings or overnight improvements in service delivery, primary objectives in corporate compliance and regulatory control may fall short of minimum standards until all components of a business outsourcing arrangement are mature and performing in tandem effectively. Furthermore, moving proprietary business knowledge and custodial operations outside corporate boundaries may result in an unacceptable loss of dominion as it relates to internal compliance mechanisms. The current vigorous regulatory environment coupled with rapidly changing technology and business landscapes demands that executives fully weigh the potential downsides and risks of each outsourcing service relationship before jumping to outsource critical business functions. Once decisions are made to engage and involve external vendors and service providers in critical enterprise business functions, a sturdy governance sourcing methodology will help guarantee that outsourcing relationships yield unremitting high value. It pays to ensure that your outsourcing vendors have satisfied the compliance stipulations for their particular industry or practice area so that they may more seamlessly support and meet the compliance and regulatory requirements of your business. DMR

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DM Review

corporate governance

Risk Management Systems

by williamlaurent

In today's information age, organizations have judiciously expanded their definition of risk by examining a multitude of new threats, exposures and potential circumstances that could compromise strategic objectives and business continuity, erode shareholder value and jeopardize trusted brand-names. Complex risk management systems and technical architectures that help gauge and assess risk have found their way into corporate governance agendas as IT has finally been brought to the forefront of risk management (RM).

An effective RM system will support corporate governance initiatives by establishing an infrastructure to effectively take stock of and control risk; organizations will be better equipped to educate employees about risk and delegate its management. With one central repository to track, gauge and report risk, substantial policies that address and quantize its consequences can be generated on both a departmental and corporate-wide level. A prudent and well-planned culture of risk management and aversion as well as methods for identifying plausible perils are more handily promoted throughout the enterprise so that directors and managers can be proactive and not reactive.

> As greater worldwide attention to proper operational disclosure and increased transparency in business dealings have materialized, skillful risk management has become synonymous with sound business management.

Company directors often only think about the most obvious corporate risks such as credit, operational, legal and market risk; however, the world of risk is bigger than many recognize. Institutions need to measure and manage looming hazards across a wider spectrum, rethinking the associated dimensions they are currently measuring. They must be able to tie together facts from disparate silos of market, credit and operational data and merge them with more abstract exemplars (intellectual property, brand loyalty and much more) that cannot be quantified and reported easily on an average balance sheet – factors that often lay outside the usual scrutiny of the chief risk officer.

Risk Intelligence Hierarchies

Robust RM systems will capture all types of business intelligence from which analysts can construct numerous what-if scenarios. Full-bodied risk intelligence hierarchies (RIH) can be created, which identify both the likelihood and impact of different scenarios. RIH will greatly aid in the identification of tactical points of control in business processes that may need adjusting in order to reduce risk potential. Once leading indicators of risk are properly understood, it will become much easier to maintain real and sustainable competitive advantage by embedding RM controls into all business work streams and data supply chains. It will also be easier to turn data about liabilities into actionable knowledge across business lines and products with the transparency you have come to expect from other dashboard systems that integrate quantitative and qualitative knowledge. Armed with enhanced predictive insight, businesses can avoid spending too much capital on risks that are out of proportion with their likelihood or potential impact. RM systems that are built to house auditable performance targets and goals (with metrics that can scale with fast-changing regulatory environments) will ensure all stakeholders receive a significant return on their investment. In addition, RM best practices (stored as rules in system metadata) will be reinforced by supporting application and database architectures.

Many events of the recent past have forced executives to pay a great deal of attention to the corporate governance process. They have become more beholden to both investors and regulatory bodies – and even the good of society – than ever before. As greater worldwide attention to proper operational disclosure and increased transparency in business dealings have materialized, skillful risk management has become synonymous with sound business management.

Large organizations must be able to clearly communicate with regulators, auditors and specialized rating organizations such as the Governance Metrics International (GMI), which has a well-established corporate governance rating system. Building a data governance architecture that can scale dynamic regulatory environments is one of the least sexy and most ignored elements of RM. However, savvy executive leadership is starting to learn that strategic risk systems and compliance-based data warehouses are important components of good corporate citizenry. DMR

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DM Review

A Better Era of SOA Governance

By William Laurent

In the last 18 months, the number of tools and applications in the marketplace that support and aid organizations in their service-oriented architecture (SOA) governance pursuits has increased tremendously. These best in class (dashboard-centric) products are now bundling SOA transactional monitoring functionality with more governance-focused components in a unified, unprecedented manner. The ability to merge SOA performance (transactional) data from a common interface and graphical framework with more static repository-oriented metadata (which deals with change management, versioning, classification and typing, service contracts and interface rules) helps make SOA less threatening and appear more governable to IT directors. SOA is maturing and creating a demand for new and improved means and methods that will assist in the governing of distributed services. Due to the distributed nature of SOA, the complexity of IT architectures has not lessened. While the enterprise service paradigm may result in fewer moving parts, the existing pieces serve more disparate types of consumers and customers than any legacy application or suite of applications could ever aspire to. In addition, we have now reached a critical juncture in SOA where governance is extending out of IT and merging with business considerations. SOA architects and managers need to understand not only how well their services integrate into in the larger context of enterprise technology architecture, but how well those services perform in supporting their constituent business processes.[1]

SOA vendors now offer highly customizable dashboard solutions that provide companies with a keen insight into their distributed services, from both IT and business-centric points of view. These consoles often integrate metadata repository features with real-time monitoring capabilities. In order to realize a more perfect SOA governance practice and show empirical ROI on governance policy, organizations that have adopted SOA need to understand exactly how well their services support constituent business processes. This means that the correct metrics and measurements associated with service contracts must be captured and presented in a way that is cleanly understood. While standard key performance indicators (KPIs) that assist in measuring a service's effectiveness will vary from vendor to vendor, the industry as a whole seems to be reaching a consensus on which KPIs best convey service-to-business alignment and equilibrium. In this way, the SOA industry is quickly bootstrapping itself in order to ensure that transparency into their clients' service architectures - from a consolidated vantage point - remains a less elusive task. Through a unification of transaction monitoring and metadata management, quantum leaps in SOA governance have become a welcome reality. Using the themes of metadata and transaction monitoring, let's look at some of the characteristics and functionality of SOA governance dashboards.

The SOA architect should have the capability to create and associate a tremendous amount of metadata to each service. Metadata is always the primary means of support in the governance of a service and its related artifacts. Some important categories of metadata are:

- Service uptime and service throughput,
- Interface definitions, including authentication and valid invocation parameters,
- Version control information,
- Exception handling and fault recovery mechanisms,
- Ownership and accountability hierarchies,
- Consuming business processes mapping,
- Complete representation of semantic and lexical references that are of interest to the service,
- Environment and platform logistics and
- Graphical portrayal of relationships and linkages to other distributed messaging architectures.

SOA governance dashboards offer a common platform where real-time performance monitoring and IT-centered performance metrics can be collected, aggregated and presented in legible and customizable fashion. SOA must be able to scrutinize how a business process is behaving and being supported by a service across various deployments, technology platforms and global infrastructures, serving up information on:

- Service uptime and service throughput,
- Security breaches including the detection of rogue services,
- Real-time service policy management and interface resolution and
- Exception handling (based on predefined routines, severity thresholds and exception paths).

It is important not to forget how many dimensions there are to SOA governance. It is an around-the-clock task of monitoring, measuring, improving and managing change - from both a bottom-up paradigm (from transaction to policy) and vice versa, where policy drives service contracts, interfaces, monitoring techniques and promulgates a culture of SOA governance. Establishing standards of control requires a skillful merging of both IT and business perspectives. This is necessary if SOA quality can ever hope to conform to a governance agenda and keep growing and scaling to support the business strategically to truly deliver promised ROI. Getting a solid ROI for your SOA governance efforts will best be achieved through the use of a dashboard type of application, which will be able to monitor, police and report on the flow of service-based transactions throughout the enterprise (across multiple infrastructures), managing the relationships between services and subscribers and cataloging a wide-berth of SOA metadata throughout the lifecycle of all services.

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DM Review

data governance

The Importance of SOA Governance

by williamlaurent

Service-oriented architecture (SOA) has become the new de facto standard for designing and creating reusable business rules and logic that can be shared enterprise wide in a distributed (multiplatform) manner. Well-executed SOA implementations will bridge the wide gap between enterprise architecture and business strategy, as companies achieve a closer alignment of IT and the business and, in parallel, implement the robust reuse of existing technology and application code with unprecedented agility and cost effectiveness. However, the rapid adoption of distributed cross-platform Web services and SOA architecture fundamentals has resulted in a multitude of unmanageable complexities for IT managers and architects, many of whom are just now starting to take their first steps in untangling their SOA webs.

Without an adequate means of control, SOA can quickly lead to trouble. Because business logic is shared outside of traditional silos (organizational units, dedicated systems, etc.), the potential company-wide impact of any given piece of code (or service) becomes greatly increased. One change to a service may impact many business segments, thus, there is a pressing need to fully comprehend service interrelationships because they may (more often than not) solve multiple (though similar) business problems and contain complex domains of ownership. It is very difficult to rein in the sprawling operational complexities that are inherent in SOA and incorporate them into an enterprise architectural layer that is solid, reliable, secure and scalable. SOA governance must be introduced into all IT and corporate governance portfolios.

The failure to implement SOA governance will result in a brittle and unmanageable architecture where a distributed mess of software components that offer poor business support will flourish unchecked. For example, it is often very easy to create, invoke and consume rogue Web services; furthermore, often a very raw and undocumented SOA emerges as a result of a bunch of independent projects that were originally charted to solve mutually exclusive business problems. An enterprise that fails to realize the importance of an effective SOA governance structure – one which unequivocally aims to align IT service delivery with business strategy – may not be well positioned to greatly benefit from SOA. SOA governance creates a higher return from all SOA investments by establishing lucid communication channels, ones where effectiveness and accountability can be measured and quantified.

During the planning phase of building an SOA framework, managers must have an understanding of what is required from a holistic governance perspective and bake it into all phases of the project lifecycle. It is important for all stakeholders to understand that weak governance practices during planning and development phases will lead to projects that do not correctly serve the business or maximize/leverage current IT investments to the fullest allowable extent. As would be expected, major software vendors are now incorporating the mechanisms of SOA governance into their product suites. The availability of software/tools that help organizations model, map, monitor, manage and govern their SOA topographies and infrastructures has increased exponentially so that maximum communication and code reuse is achieved and typical architecture and business risks are mitigated. IT architects and managers can ill afford to be without a proper means of visual analysis of their SOA environments if they are to effectively promote robust code reuse, consistent performance and security, broad support for governance policies and acceptable business continuity, as well as centrally manage and guarantee that service level agreements are being fulfilled across business lines – throughout service lifecycles. Best-of-breed tools will help managers track and monitor SOA infrastructure and control the most important components of change management such as versioning and impact analysis. At the core of SOA governance is that proper care and diligence is applied to the SOA repository and registry. A registry promulgates the universe of available deployed services and the rules for their consumption and invocation. The repository will help assist in the managing of services and their associated artifacts through their full lifecycle – from planning to development to deployment. Metadata about services will capture information about service interactions and relationships as well as store important related details such as policies, procedures and milestone information. The sub-task of data governance as it relates to SOA metadata becomes critical, as it will be the primary means to managing the inventory of services (and provisioning new ones). Like other forms of metadata, information and attributes that describe services must be compiled, maintained and stored in a fashion that is consistent, secure and transparent.

General rules and guidelines that touch on important attributes and behaviors of services must be unified and codified into enforceable and well-defined policies. Currently, however, SOA governance standards are still evolving: there is not any one industry-accepted standard that attempts to cover it all – ensuring continuity of business operations, limiting SOA security exposure, managing and planning dependencies, reducing integration problems, minimizing risks and liabilities and beyond. SOA governance serves as a mechanism to facilitate solid relationships between all interested parties (service consumers and providers) and to ensure that all services are managed in compliance with a company's standards, policies and business strategies. A culture of governance in which roles, rights and responsibilities are clearly defined will make the difference between SOA success and failure. DMR

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Social Networking and the **Future of Governance**

Engaging in democracy, enabling participation

BY **WILLIAM LAURENT**

Over the last several years, membership in social networking sites has grown exponentially to include more than 50 million users worldwide. Facebook and MySpace are now used by approximately one-quarter of the population of the U.S. and Canada.

These impressive numbers will not slow in the near-term as more and more people seek their own personalized turf and social circles on the Internet. With the election of Barack Obama, the 44th president of the U.S., the core values of social networking are poised to reach far into the White House, helping to better engage citizens in the political process and allowing the voices and views of the masses to be heard as never before. Social networking is making democracy even more democratic. Barriers between elected officials and their constituents are crumbling further, as politicians have dynamic and instant access to public opinion via the Web. Elected officials who ignore the grassroots momentum of social networking and refuse to harness its potential may not only govern worse, they may find themselves out of office. In the last few years, we have witnessed Web-enabled social networking reshape the way politicians manage and run their campaigns.

From this point on, social networking will enable effective governance for both corporations and lawmakers at all levels. Given recent developments in both the public and private sector, it is not a stretch to say that the future viability of corporate governance will be somewhat dependent on the incorporation of social networking into its functional portfolio.

One of President Obama's fundamental goals is to make the U.S. government as transparent as possible. This same goal of transparency is shared by board members of corporations all over the world. After all, in the last year we have seen the devastating results of having low transparency and accountability in the private sector. Often enough, a lack of transparency stems from a lack of effective communication. Yet governance will always be dependent on communication and collaboration. Governance is about people knowing the rules, contributing opinions and sharing information about countless aspects of the governance agenda. When communication falters, risk increases. (I am reminded of this simple yet important concept every day when I take the subway in New York City: riders are reminded to be vigilant for suspicious packages and report them to the authorities immediately - the more eyes in use, the more that the risk to public safety is decreased.)

To date, the Internet does not have a great track record of bridging social and political divisions at a national or state level (although it has functioned well in disseminating information that makes lives richer and better). This is because government-based social networking has to serve the interests of a large community whose common interests will always be wildly divergent. The good news for business enterprises is that using social networking to help strategically enable corporate governance is a much less perilous task because the network's members will be sharing common corporate values and goals. Even better, for many organizations, the physical infrastructure that will be needed for robust social networking will already exist. Chances are high that existing communication and collaboration platforms (such as employee bulletin board services in the corporate intranet or specialized messaging busses) can be leveraged or scaled up.

Current belief among political pundits is that the White House's home page will start to morph into a quasi-social network, or at least incorporate many elements of social networking functionality. In this way, the current administration can better keep concerned citizens informed about issues and let them voice both positive and negative views about pending legislation. Their posts/comments will be reviewed in real time by government staffers, whose job it is to gauge public opinion and promulgate that to the appropriate governmental representatives.

But whether social networking is used to support government objectives or corporate ones, these networks need to be well-architected from both physical level and logical perspectives. On the logical side, networked discussions need to be carefully categorized and classified so that discourse can be easily tracked and managed by both users and administrators. From the physical tangent, discussions and posts must produce actionable data for driving change and mitigating future risks. The key to success is making sure that all participants feel fully engaged in the governance process. Major successes in the governance engagement model have arisen out of the application and integration of social networking into the public school system, with parents tracking and governing the progress of their children and collaborating with teachers on matters of performance. In fact, the entire effectiveness of a school district, school program or individual teacher can be measured once enough data is collected and analyzed.

President Obama was savvy enough to understand the advantages that social networking sites afforded his campaign at all stages - from before the primaries up until the general election through his first 100 days in office. It will be quite interesting to see if his administration will be able to use the same sorts of social networking technologies to govern the country better. Never before have leaders had such a means to link and interface directly with the populace.

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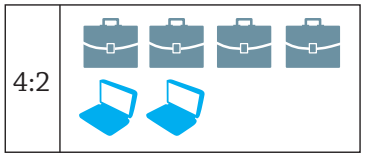
Keeping Tabs on TARP

TARP-driven BI discourages behavior that focuses on short-term results at the expense of value creation and innovation in the long run **BY WILLIAM LAURENT**

AS WE ALL REFLECT ON THE ANNIVERSARY OF THE GREAT FINANCIAL COL-lapse of 2008, let me say I'm immediately struck by how much regulatory activity has transpired since the demise of Bear Stearns and Lehman Brothers and the restructuring of other "too big to fail" financial behemoths. In quick response to the financial woes of U.S. institutions, the federal government and banking industry scrambled to enact TARP (Troubled Asset Relief Program) legislation. While the fundamental theme of TARP – bailing out institutions in peril – is familiar, a multitude of attached governance, risk and compliance responsibilities for financial companies now requires an agile and innovative response from corporate business intelligence and financial IT systems. Within the confines of TARP exists a complex web of politically sensitive business logic.



It is vital to realize that TARP calls for a greater amount of scrutiny, transparency and senior-level accountability than what was required by the Sarbanes-Oxley framework. This is especially true when it comes to issues of executive remuneration and bonuses. For corporate boards that have become de facto custodians for TARP money, fundamentally restructuring their executive compensation strategies to align sensibly with the U.S. Treasury's TARP guidelines has been an ongoing struggle. Under TARP, a wide array of provisions addresses everything from "equity as salary" payments to grandfather clauses that maintain employment contracts that were legally consummated before the TARP bailouts. The very employees subject to restrictions on bonus payments vary by each corporation.

More specifically, bonus restrictions depend solely on the amount of TARP monies that have been received by a company. In general terms, the CEO and the next 20 most highly paid employees will fall under the most restrictive of TARP statutes. Their financial destiny may be altered by various claw-back provisions, which can nullify bonus payments if it is found that flawed or inaccurate performance metrics were used to determine and calculate an employee's bonus. Other restrictive measures include golden parachute and severance limitations that stay in force for the duration of the company's TARP dependency. Businesses that have garnered sums from TARP exceeding $25 million are required to form a compensation committee composed of directors that are not current board members. The committee will be responsible for closely documenting the firm's current landscape of executive compensation and reporting a detailed picture to senior risk officers at least once every six months.

While compensation issues are the most visible compliance component of TARP, a host of additional tenets warrant extensive compliance tracking. One such decree revolves around the elimination of excessive expenses, i.e., luxury expenses incurred primarily by executive managers. These may include company parties and "business" excursions, private jetting and ostentatious globetrotting, renovations to office space (like a $1,405 trash can) and other questionable outlays of corporate largesse that in the past were called "perks." Going forward, TARP-reliant companies must establish policies that directly confront such expenditures and set up approval/prohibition processes to track adherence to these policies. All policies must be visible to the public eye (i.e., posted on the company's Web site); furthermore, any violations of policy will have to be promptly reported.

Internal TARP-facing analysis should be able to expose potential conflicts of interest or other behaviors that may pose risk to the firm's reputation, recent compliance mandates as well as overall financial well-being. TARP-driven BI adds value by discouraging behavior that focuses on short-term results at the expense of value creation and innovation over a longer time horizon. With the advent of TARP, financial BI must evolve further, to become an agile and holistic craft with large dependencies on enterprise-wide GRC practices.

Businesses that are beneficiaries of TARP funds rely heavily on their corporate knowledge factories and performance management applications, often having to merge the processes and data of these systems with those from human resources in order to achieve the required transparency into executive compensation and expenses. While the challenge of timely financial data integration looms large for IT departments, a parallel burden of creating a new standard of leading indicators (and key performance indicators) of risk, compliance and specialized areas of performance has been foisted on senior directors and governing boards. The days of relying on a company's share price as the primary indicator of a CEO's performance are long gone; tougher questions will now be asked of business leaders. After all, companies that fall under the aegis of TARP are virtual stewards of U.S. taxpayer monies. This time, the entire population of the U.S. is a shareholder. For C-level businessmen to achieve success with new compliance and governance requirements and continue to annually certify corporate financial balance sheets with confidence, financial BI must play a prominent supporting role. If they are handled correctly, TARP obligations can serve as a catalyst for financial organizations to repair their fragile public image and instill a better trust in the broader financial market. //

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The Town Hall Model in Governance

Important steps have been taken toward open and transparent interactions between the federal government and citizens; corporate leaders should follow suit

BY **WILLIAM LAURENT**

This week I discovered a very important email in my inbox:

Good afternoon,

You are receiving this email because you signed up at WhiteHouse.gov. My staff and I plan to use these messages as a way to directly communicate about important issues and opportunities, and today I have some encouraging updates about health care reform.

For me, the importance of this email had nothing to do specifically with the issue at hand - health care, in this case. What made a profound impression on me was how much progress has been made by the Obama administration in rewriting the engagement model of democracy and the governing of our nation. Since the presidential election, political pundits and electoral historians have been quick to point out how the current administration had leveraged the Internet - especially with respect to social networking - to catapult themselves into office. With President Obama's virtual town halls gaining prominence among the populace, we are witnessing a giant step forward in the use of Web-based technologies to better support and enhance the democratic process of the U.S. Most political commentators now expect the strategic use of virtual town halls to increase by orders of magnitude and be applied to an ever-growing portfolio of governance opportunities. Political content aside, President Obama's virtual town halls have received overwhelmingly successful reviews and accolades for their technical execution and level of sophistication, not to mention their reinforcement of U.S. democratic values.

The first virtual town hall in the history of the White House centered around a small gathering of citizens that congregated in the building's East Room. This was augmented with a full video Webcast, which helped foster a true sense of community and enhanced the forum for all. For those who attended the live (in-person) president's town hall, a pre-scripted meet-and-greet was arranged. Five questions were chosen at random from the attendees, none of these questions took the president out of his comfort zone. However, when it came time to take questions from the virtual participants, the discourse became much more interesting, complex and lively. A good portion of these questions were culled from the White House's "Open for Questions" Web page, which provided all citizens with a simple platform to voice their concerns and complaints about a host of current issues, from education to the economy. More than 100,000 questions were submitted by approximately 93,000 people; what is more, 3.5 million people voted for the questions they liked best. These numbers reflect an impressive level of participation and willingness of voters to listen to one another's opinions. From a single point of entry, Open for Questions got people talking and linked into the issues that affect their lives. (After the conclusion of a presidential town hall, the universe of unanswered questions remains entrenched on the Internet so that they can be revisited at a future date, provided that there is still relevance and momentum around the issues they address.)

The White House's virtual town hall strategy has given corporate America an outstanding example on which they can build a better employee-engagement model. In the corporate world, senior management (specifically C-level leaders) would be wise to learn how to leverage the virtual town hall model to address their most vital constituencies - their employees, shareholders and the communities in which they do business. In the current global business climate, mistrust and misunderstanding of business executives run rampant. CEOs and their respective board members are realizing that they must better engage their rank-and-file employees in two-way dialog that has meaning and vitality. Compared to government-sponsored ones, town halls in the private sector will attract much higher levels of attendance. Participation becomes a lot more crucial and discussion much more energized and animated when people's livelihoods are concerned. As would be expected, the most unpopular questions with senior management will be the most popular with their employees; therefore, CEOs must come to the discussion prepared to hear tough questions on outsourcing, downsizing and other not-so-rosy areas of employee concern. Employees want to feel that they are truly in an environment where they can control their own destiny and actualize their potential, as well as that their work provides a high degree of value to their firm.

The Obama administration has pointed the way toward the future of governance, attempting to better socially network citizens and get them more involved in the political process by making the means of participation much easier and more friendly. Important new steps have been taken to achieve more open and transparent interactions between the federal government, its citizens and the national media (that has often served as a bridge between the two). The movers and shakers of the corporate world need to take heed of these developments. While conducting an enterprise-wide town hall with their employees may not be as attractive as an ego-feeding appearance on CNBC or an interview in a top business magazine, a virtual meeting with the great mass of workers they manage may ultimately have more value. Corporate governance experts should accept the fact that they may be lagging behind the public sector when it comes to new modes of bilateral communication, and they should take steps to catch up.

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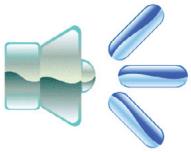

Where We're Headed with Web 3.0

Not a gilded age or paradigm shift, but social interaction will increasingly drive business

BY **WILLIAM LAURENT**

The ubiquitous buzz about Web 3.0 continues unabated; nevertheless, a clear consensus or definition has not emerged of what Web 3.0 really is, or how the e-enabled world will move from Web 2.0 into a sensational era of super intelligent content and knowledge management services. However, one thing has become clear to me: Web 3.0 will not result in a huge paradigm shift or a gilded age of computing; more likely, it will be a subdued convergence of existing technologies and methodologies with new ones that borrow heavily from the past. Web 3.0 will be a catalyst for a paradigm shift that's at least a few more years away. But it won't result in a sudden brave new world of information management, regardless of what marketing materials and industry thought leaders would have you believe.

Let it be noted that I agree with the majority of industry pundits about the promise and potential of the semantic Web and its importance to the evolution and emergence of Web 3.0. In the semantic Web, all information is categorized and stored in such a way that both a computer and human being can fathom what it empirically represents. Unlike Web 2.0 – where keywords are used to organize data into digestible nuggets for search engines – Web 3.0 will effectively categorize and present digital information to users in a visually improved manner that enhances interaction, analysis, intuition and search functions. The key driver in this scenario is the concept of taxonomies – standardized and self-describing classifications with codified semantics that are related to one another via highly normalized and descriptive metadata, not by a pastiche of static hyperlinks. For information on the World Wide Web to have a solid degree of relevance to users and live up to the 3.0 hype, it must contain a new magnitude of (artificial) intelligence.

With Web 3.0, the Internet can finally realize elaborate and complex virtual worlds, where social interaction drives business operations. These worlds have been anticipated and talked about for years, but they have so far failed to materialize. For a long time I have dreamed of a virtual music factory – one where I could seamlessly shop and listen to music, receive staff recommendations, talk to fellow shoppers and put my three-terabyte music collection on the cloud. Instead of combing through recommendations on various music shopping sites and doing countless searches to find newly recorded classical, pop or jazz performances, I would be able to type a somewhat complex sentence into a Web 3.0 browser and get back highly customized, organized and impeccably relevant results. The browser then would redirect me automatically to my favorite virtual music store where I could download the recording and place a copy of it in my own personal cloud space so that I could listen to it, on-demand, via a Web-enabled device (iPhone, computer, home stereo system) anywhere in the world. Because my Web 3.0 browser would have learned my likes and dislikes, it would start to function as a trusted adviser, mentor and personal assistant and less like a search engine from an earlier epoch of pretaxonimized information.

The more interaction I have with the Internet, the more my browser would learn about me to predict future behaviors and consumption patterns. Not only will it be better able to identify what sort of music and entertainment I am likely to enjoy, it will help put me in touch with people who share my interests and aspirations. In this way, browsers will finally be able to position themselves to be true lifestyle canvases, taking into account cutting-edge concepts such as social bookmarking (websites, products and people ascribed various characteristics or things voted on by other Internet users) and in-group searching to produce a much more customized and targeted Web surfing experience.

Massive improvements in mobile computing and interconnectivity of remotely enabled devices coupled with Web 3.0 developments will result in the positioning of the Internet as the "world's common database." With the semantic Web firmly in place, the automatic and instantaneous publishing and sharing of knowledge silos, especially those historically difficult to classify and describe, will be dramatically improved. Progress will not be an easy road, though. There will be many issues as we reconcile the world's spoken languages with specialized taxonomies and schemas, attached metadata and descriptors. And few people seem to be talking about the effect that change (business, social, regulatory, etc.) will have on these taxonomies, or how to best manage these changes. In another interesting twist, current search engine optimization practices may undergo wholesale adjustments as the different information and architectural standards of Web 3.0 fight for supremacy. As with any new technology or Internet-related development, personal privacy issues will also cast a large shadow over the landscape. All in all, it is going to be fascinating to watch how both the software and hardware industries carefully balance the hype of Web 3.0 with marketplace realities and limitations.

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DM Review

corporate governance

XML's Supporting Role

by williamlaurent

A predominate theme of corporate governance is the efficient alignment of enterprise business units so that the company's performance can be continually measured and strategically improved in parallel with efficient tactical operations. Communication, accountability and standardization are primary components of this desired alignment. IT and business executives need to fully understand how various standards for data exchange in their industry space will implicitly enforce and support governance initiatives and strategic decision-making. In keeping with the themes of communication, accountability and standardization, a few of the more successful recent (XML-centric) data exchange formats offer good examples of each from a governance perspective.

For law enforcement agencies that have been adopters of the Global Justice XML Data Model (Global JXDM), business operations have become more efficient and less siloed. Better known as "Justice XML," this model greatly improves the quality and efficiency of information sharing between law enforcement and public safety institutions. The increased accessibility and sharability of law enforcement data across the entire criminal justice system – locally and nationally – has resulted in more effective policing practices nationwide as well as improved execution of many Homeland Security mandates. Better communication has resulted in a sharpened ability to assess and respond to risks and threats from individuals and criminal and terrorist organizations. Federal, state and local resources can now be allocated more competently; likewise, the effectiveness of new-age law enforcement methodologies such as community policing can be measured with an unprecedented precision and ease. Better law enforcement – all agencies working in tandem and sharing information throughout all national jurisdictions – means better governance of an entire country.

The eXtensible Business Reporting Language, better known as XBRL, gives corporations a leg up on achieving regulatory and compliance objectives by helping streamline the perpetual communication of their most important business and financial data. Sarbanes-Oxley has put corporate executives in a historically unique position of heightened accountability: poor accuracy of financial results can mean harsh legal penalties. The good news is that XBRL is designed to accommodate the most complex of financial reports, such as 10K forms (which are required of all publicly traded companies in the U.S.). As with other valid schemas of XML communication, XBRL is very scalable and can be put to use by all organizations that have robust financial reporting requirements, regardless of industry and regardless of whether or not a company is privately held or traded on an exchange. Both internal and external consumers of corporate financial data – investors, analysts, customers, regulators, etc. – can now process and account for financial data in a much more efficient, accurate and optimized manner when it resides in XBRL format.

Although there continue to be different vocabularies or lexicons used in various vertical markets around the globe, some of the more visible XML schemas have evolved to the point where they are accepted as true industry standards. Two such standards that will not have their momentum reversed are Financial Products Markup Language (FpML) and Market Data Definition Language (MDDL).

- FpML is now considered to be the primary format of exchange for most processing associated with structured financial products such as swaps and derivatives.
- MDDL continues to gain credibility as the standard interchange format for global equities, indices and more traditional classes of investment products.

Both standards are flexible enough for storing extremely complex data about different classes of financial products and all their business interactions, organizing financial market information in a modular schema that is readable. By canonizing the formats and definitions of the most common and critical financial data elements that get processed by various trading and market data systems, regulatory compliance transforms into a more lucid affair. Communication with internal company systems and external auditors and regulatory bodies becomes better defined. MDDL and FpML also lend themselves to the latest developments in service-oriented architectures and real-time messaging infrastructures that have become the standard for communication of financial data in mission-critical brokerage and banking systems – from trade execution to settlement.

New XML data exchange standards continue to evolve and materialize at all levels of business, as global consortia reach new heights of cooperation in standards-based best practices. Improved lexical and schematic standards of data exchange have given enterprises distinct advantages in achieving increased data integrity. From better control and confidence in semantics and domains evolve more effective business intelligence solutions – from data warehouses to executive dashboards. For the foreseeable future, demand will be high for expertise that can capably integrate these different data communication and transfer standards. For example, financial organizations may want to integrate MDDL-based content with Justice XML feeds to support know-your-customer or anti-money-laundering dictates. Executives that focus on governance initiatives should understand what open and free data exchange standards exist in their industry and how to harness their innate benefits in order to reduce operational constraints (especially those associated with data) and better capture and measure company-wide performance. DMR

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