Treating Data as an Enterprise Asset to Achieve Business Value

Information Governance can help Telecom's improve the quality and reliability of data to increase profitability, reduce unnecessary costs and risks.


Smart **is...**

Managing Data for Profit and Performance

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Telecom executives continuously wrestle with the financial and organizational challenges of keeping portions of their business competitive while simultaneously building, refining or redefining other portions of their business. With that in mind, Telecoms who apply information governance to solve business problems and service significant events in a similar manner can recognize a significant return, and also springboard newer Improve-The-Business initiatives.

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Telecom executives all over the world are changing their business models, broadening their revenue-generating services and transitioning to more agile and less complex networks. Telecoms are transforming from a network centric operator model to a customer centric, high-margin content and data services model that enhances the user's-experience. To accomplish this, Telecoms are tapping into operational and business support data locked up in information silos to gain a better understanding of customer behaviors, preferences and habits. Telecoms are also becoming more agile by consolidating and integrating network and service architectures across product lines to gain needed efficiencies and reduce costs.
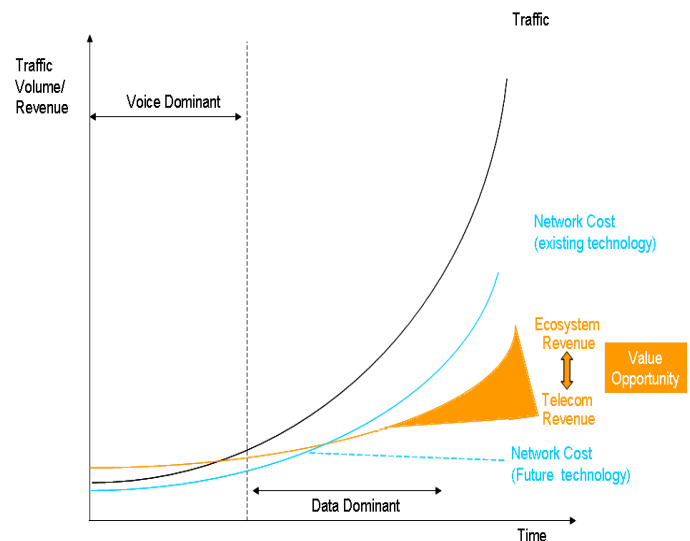
Source: Nokia-Siemens; IBM Institute for Business Value (IBV) Analysis

According to a recent IBM CEO and Telecom Executive survey, Telecom's sustainable competitive advantage will depend on their ability to align their distinctive capabilities, specifically their strategic assets in fixed-voice, broadband and mobile networks with non-traditional service providers to deliver new customer experiences that others are unable to match easily. Success will be measured by Telecom's ability to off-load customer acquisition costs, increase ARPU and control churn. As newer service providers (think Google or Skype) create their own siloed services that are disconnected from the Telecom's network delivery platform, the value of

user behaviors cannot be fully exploited without a flexible Service Oriented Architecture (SOA) grounded by well-defined information (or data) governance (IG) and decision support strategies. Therefore, actions within Telecoms must focus on:

1. Reducing network and infrastructure complexity

2. Integrating [internal/external] shared and siloed services and data

3. Improving service performance and enhancing the user experience

4. Controlling cost

5. Reducing security and privacy risk

6. Monitoring and measuring business and consumer spending trends to avoid putting unnecessary caps on services revenues

What is Information Governance?

According to Soares author of the book The IBM Information Governance Unified Process, information governance is the discipline of treating data as an enterprise asset. It involves the exercise of decision rights to optimize, secure, and leverage data as an enterprise asset. It involves the orchestration of people, process, technology, and policy within an organization, to derive the optimal value from enterprise data. Deriving optimal value from the enterprise is the responsibility of leadership. And, since almost every Telecom's success hinges on the quality (timeliness, accuracy, reliability, completeness) of enterprise data, deriving optimal value from enterprise data should also be a top-down responsibility. Organizations who want to attain optimal value from their information governance program should establish accountability at leadership, middle management and stewardship levels.

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The practice of Information Governance should be viewed as a journey …not a sprint, and should be applied to solve specific business problems or address significant events.

Using inconsistent or conflicting analytics or intelligence as a basis for critical decision-making is an example of a business problem. Whereas, a data breach or an acquisition (M&A) should be viewed as a significant event. While both are valid drivers for information governance their importance (or need) may surface at different times or one could be deemed more critical when limited funding or the use of scarce resources is a concern.

IBM Information Governance Council Maturity Model

Although the market is starting to crystallize around the definition for information governance as *treating data as an asset*, it is unrealistic to assume that businesses can afford to fix *every* information governance challenge it may have as a single project. The practice of Information Governance should be viewed as a journey …not a sprint, and should be applied to solve specific business problems or address significant events. Using inconsistent or conflicting analytics or intelligence as a basis for critical decision-making is an example of a business problem. Whereas, a

data breach or an acquisition (M&A) should be viewed as a significant event. While both are valid drivers for information governance their importance (or need) may surface at different times or one could be deemed more critical when limited funding or the use of scarce resources is a concern. Applying information governance as a repeatable practice towards solving Telecom's most pressing business challenges allows Telecoms to achieve (and maintain going forward) optimal value from a defined subset of enterprise data assets before moving on to the next problem. The business may also realize tangible returns from initial investments to help fund the practice going forward.

The Case for Information Governance

While revenue opportunities within Telecom appear to be significant, there are still some information governance challenges to overcome. The cost of poor data quality and its impact on revenues, marketing and direct mail, operations, CRM, regulatory, privacy and customer churn can be significant. Some companies have reported up to 30% of their customer data as being duplicated and replicated across their enterprise. This business problem occurs whenever critical data (i.e.: customer, product, order) standards and governance practices are not consistently and universally applied across all points of data acquisition, creation and existence.

To that end, ensuring data quality within and across foundational data assets requires a cohesive, ongoing and measurable information governance practice. According to Mr. Soares, information governance metrics for Telecoms include:

1. The existence of, and adherence to defined policies surrounding information lifecycle management (i.e.: data retention, archiving, purge) to control data and supporting infrastructure growth and service level performance
2. The management (discovery, compliance, auditing and reporting) of new legal and regulatory requirements and impacts
3. Ensuring that all data being used by the enterprise is fit for purpose and can be trusted for informed decision-making

4. Validating that physical data assets (sources) and their contents properly align to, and comply with logical data models, technical metadata descriptions and defined business rules
5. Demonstrating improvements (progress) in operational and service excellence, financial reporting, business agility, risk and cost reduction or avoidance
6. The rationalization, consolidation and integration of applications and systems during M&A activities or newer COTS (commercial off the shelf) replacement
7. Ensuring accountability from data owners and data stewards
8. The ability to propagate existing frameworks (e.g.: ITIL, ISO, COBIT) and data standards to the rest of the enterprise's data assets.

As stated previously, the practice and benefits of information governance are best measured and realized when they are applied to solve a specific business problem or address significant events. To avoid boiling the ocean, Telecoms should insert applicable information governance practices, funding needs and the rationale (metrics) for achieving stated outcomes into funded (improve the business) initiatives that solve specific business problems. Applying information governance in this manner may help key-stakeholders recognize some quick wins, in addition to longer-term benefits to ensure the most reasonable and lasting funding approach.

Information Lifecycle Management (ILM)

If the size and complexity of growing production and non-production databases, related files and infrastructures has become an ongoing funding and

performance problem for the business, applying information governance best practices may present a good starting point. Ensuring proper adherence to established or revisited ILM (retention, archiving, purging) policies could immediately reduce the size of these databases and improve overall performance. Maintaining 10+ years of data in a database that has a 7 year retention policy is an example of poor information governance and insufficient management metrics.

Clarifying and segregating users (roles, access, privileges) of production data may allow Telecoms to further reduce the size and cost of Tier-1 (costly) production environments. Read-only users, satisfying ad-hoc or reporting needs can be redirected to less expensive, readable archive files. By segregating users, your 7-year retention policy might change to a $2-3$ year policy by moving the remaining years to archive for read-only use. Application decommissioning and transformation initiatives will also likely benefit from these governance practices. ILM governance practices should also extend to include non-production environments (i.e.: test, QA, other) to ensure these environment are not using multiple, full-sized copies of production files. Using full-sized copies adds unnecessary infrastructure support cost, slows development time-to-market and increases data privacy and DLP (data leak prevention) risk.

Master Data Governance

Business success relies heavily on the acquisition, management and use of quality data. The marriage of customer and product data enables bundled offerings, targeted Marketing campaigns for cross-selling and up-selling, and can help control churn. AT&T's bundled offering response to Verizon's marketing of a more reliable network for the Apple iPhone is a clear example. The integration of processes, systems, services and data must work seamlessly together to support key business initiatives, and all must be fit for its intended purpose.

Whenever this isn't the case, changes or corrections need to be made.

When multiple customer records for an individual (or household) are allowed to exist, the impact on marketing and direct mail, operations, CRM, ARPU and customer churn will be significant. Some companies have identified up to 30% of their customer data as being duplicated, and also replicated across data assets. Information governance practices that utilize data dictionaries and technical metadata repositories, along with technologies to discover capture and cleanse these data sources can allay this business problem. Knowing who your customers are, what they have currently and what they need are critical for informed decision-making. However, knowing everywhere customer and product data lives across your enterprise, where/how that data is being used, the quality and trustworthiness of that data and whether it's fit for its intended purpose becomes a critical success factor when responding to competitive threats.

Reducing risk by securing and protecting personally identifiable information (PII) is rapidly becoming a fundamental right around the world, and across all industry segments. Recent changes in regulatory and compliance areas, such as data privacy (Russian Privacy, King III in South Africa), and data security issues such as PCI emphasize a worldwide need to decouple the rules governing these requirements from their business applications to better manage and secure business-critical information. Information governance capabilities exist to help Telecoms decouple these regulations and rules and propagate them to your company's SOA environment, rather than continuing to maintain each application, and the embedded code.

Those emphasizing the enterprise-wide use of world class discovery tools to better understand data, and everywhere that data lives can present a significant (ROI) return. After in-depth customer interviews, a 2009 Forrester TEI Study calculated discovery tools as returning a risk-adjusted ROI of 132% for the composite organization with a risk-adjusted payback period of 1.23 years. Frameworks or disciplines such as: ITIL, COBIT and ISO/IEC 20000 also add value. But it is important to note that these disciplines, as stated by Steven Adler

(IBM Information Governance Counsel) are usually a focused governance responsibility, and not a shared one.

Everyone in your enterprise, including leadership, data owners, and data stewards should assume the responsibility for ensuring that data being governed under these and other disciplines agree with all other like data (end-to-end) assets across your enterprise. To that end, those sponsoring or adopting these disciplines should ensure, using clearly defined metrics that governance progress towards addressing (holistically) the originating business problem is being consistently demonstrated.

Business Case Examples for Information Governance

Information governance programs and their technologies are not always popular programs or initiatives to fund. However, more Telecom executives are realizing that by not having these programs in place, it can negatively affect revenues, churn, profitability, performance and time-to-market. Telecom executives continuously wrestle with the financial and organizational challenges of keeping portions of their business competitive while simultaneously building, refining or redefining other portions of their business. With that in mind, Telecoms who apply information governance to solve business problems and service significant events in a similar manner can recognize a significant return, and also springboard newer Improve-The-Business initiatives. The following are just a couple of the many business case examples where IBM's Information (or Data)

Governance practices have helped real customers.

It is no secret that the amount of data living in your environment has both direct and indirect impacts on top-line strategies and projects, as well as bottom line impacts on processes, services, application and infrastructure performance, and profitability. Conservative estimates call for at least a 25% YOY growth in the amount of data in Telecom environments, while others predict as much as a 24x growth rate in data by the year 2020.

ILM - Major Telecom

The company was in the process of enhancing its long term ILM strategy for its two largest enterprise data warehouses. Continued high-growth in data volumes, negative impacts to service level agreements and escalating costs of the underlying platform presented pressures on the business to contain costs in a challenging economy. The intent was to provide the user community with a robust reporting and analytical infrastructure that would support the business as it continued to grow in scale and breadth, while delivering effective data retention, archival, recoverability, and contain costs. Specific symptoms in their current state included:

1. Misaligned Business Measures
2. Inconsistent Reporting Results
3. Massive duplication of inconsistent data
4. Hundreds of thousands of redundant, un-engineered data movement processes.
5. Excessive spending on data warehousing
6. Labor intensive, low productivity in analytics projects
7. Inability to make proper connections (e.g. customer relationships, systematic risks)
8. Lack of trust in data

Their two largest data warehouses (ECDW, EDW) exceeded 300 TB each. The largest 8 – 10 tables in their ECDW represented 50 – 60% of the overall user data. Data retention management was in place, but it was very labor intensive on a monthly basis. For the remaining data in ECDW, data retention policies had not been defined as of the time of IBM's assessment. Recovery of archived data to support eDiscovery and other legal
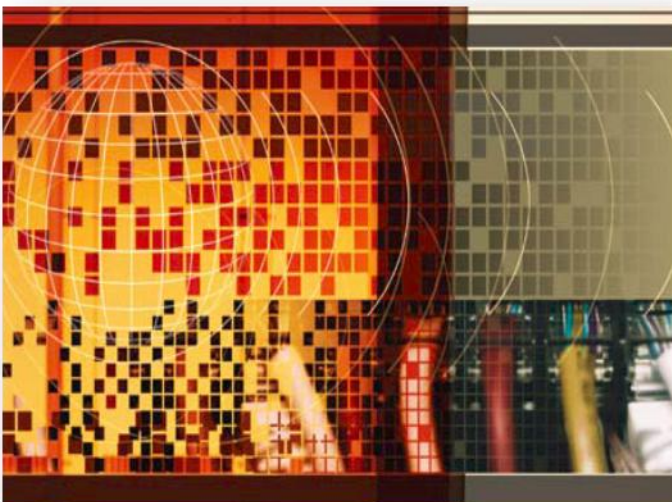
requests was time consuming (often weeks) and took up valuable disk space and CPU processing power within the production environment, impacting service levels to business users. The ECDW was growing at 5 TB per month. The customer was considering either expanding their current system or improving management for data retention and archiving to delay timing of a major capital expense. Additional efforts were also needed to:

1. Reduce the number of DM tables
2. Reduce the number of ETL jobs
3. Increase data quality
4. Increase people productivity
5. Reduce redundancy across data silos
6. Reduce hardware costs

IBM conducted a workshop assessment that captured and utilized information, cost and resources details gathered directly from key client stakeholders and resources to ensure real customer data was being used to validate all IBM solution proposals. IBM's proposed solution was to:

1. Implement IBM Infosphere Optim Data Growth Solution for the Data Warehousing Systems
   - Target ECDW initially, offset data growth of 5 TB per month to delay need for expansion of system
   - Define new data retention policies for unmanaged data and refine existing policies based on accessibility of data while archived
   - Apply further archiving to the EDW environment where inactive data can be archived and the remaining data consolidated to ECDW as needed
   - Optimize the number of Teradata nodes needed when "floor sweep" is performed to refresh the technology (i.e., 5550 replaced by 5600 nodes)
2. Implement Infosphere Optim Test Data Management Solution for the Data Warehousing Systems
   - Improve test data creation in the Test/Development environments for both ECDW and EDW

- Right-size the testing environments to alleviate number of Teradata nodes dedicated for testing

The financial and productivity benefits (cost savings and avoidance) presented to the client amounted to:

1. $12.25 Million – Archiving for data warehouses
2. $5.75 Million – Test Data Management for data warehouse testing environments

Master Data Management - Major Telecom

This Telecom had a clear business problem, in that they could not identify their most profitable customers. To improve customer service and loyalty, reduce churn and provide the appropriate offers to the right target market the company considered it an imperative to address this challenge. The customer believed that if they could reduce their time-to-market by even two weeks, they could recognize significantly more revenues, and control churn. They also believed that if they could more quickly identify & classify the customer at the CSR level, this would result in better offers that accurately represent the segment and customer profile. Finally, the company wanted to reduce administrative costs through improved information governance efficiencies.

The customer implemented IBM InfoSphere™ MDM Server to act as their enterprise Customer Master File, delivering a consolidated and administered view of customer information across all product lines, to all

residential and business customers, and through all channels, including call center, IVR, email, and web self-service. The solution also included information governance administration of key party, product and account relationships now available as a Web service, and some key data stewardship services within their existing call center. Additional cost benefits of the solution included:

1. Automating manual business processes
2. Reducing data errors
3. Reduced excess mailings
4. Identifying risk (credit)
5. Support for system consolidation initiatives

As a result, the customer was also better equipped to:

1. Consolidate data from silos
2. Integrate new systems more quickly
3. Meet demands of new business channels
4. Grow with the business
5. Identify key relationships and hierarchies

Although the full benefits of the solution have not yet been calculated, the customer was able to recognize $10 million dollars of additional revenues, attributable to a decreased time-to-market.

Security and Privacy

Major International Telecommunications Company

A leading international telecommunications organization needed a cost effective means to protect the privacy of

its customer data and comply with regulatory requirements. The organization wanted to:

1. Monitor access to private customer data located in thousands of databases across a wide geographical area
2. Implement the solution for both Operational Support Systems (OSS) and Business Support Systems (BSS)
3. Create a centralized audit trail for all database instances across:
   - Multiple DBMS platforms: Oracle, SQL Server, Sybase
   - Multiple OS platforms: Solaris, OpenVMS and Windows
   - Multiple data center locations: OSS in 11 locations, BSS in five locations
4. Monitor privileged user access via local protocols such as Oracle BEQ, shared memory and Sybase TLI
5. Produce detailed compliance reports for their auditors
6. Implement proactive security via real-time alerts for critical events, based on both corporate security policies and anomaly detection (comparison to baselines)
7. Monitor application end-users for fraudulent activities via enterprise applications such as Business Objects
8. Provide granular logging (to a single DB column) with detailed information about users (username, IP address, MAC address, application name, protocol, etc.)
9. Log all security exceptions such as failed logins and SQL errors
10. Log all query results for sensitive data
11. Provide separation of duties and non-repudiation of audit data; ensure that data cannot be modified by anyone, even authorized administrators, via access at any level (e.g. system GUI, root access to OS, physical access to storage)
12. Support cross-analysis (correlation) of log information from different databases
13. Easily integrate the solution with their existing environment (LDAP, Kerberos, SNMP/SMTP, etc.) and manage it remotely

14. Implement a solution that does not rely on database-resident functions (such as triggers, trace or transaction logs) since these can affect database performance and stability
15. Select a solution that provides strong 2-factor authentication such as RSA SecurID
16. Implement a solution that incorporates appliances with high-availability features (RAID, fail-over)

After inquiring with Gartner and Forrester Research, the systems integrator evaluated multiple database auditing vendors (including Oracle) and chose the InfoSphere Guardium solution to meet all of these client's requirements. InfoSphere Guardium is the most widely-used solution for preventing information leaks from the data center and ensuring the integrity of enterprise data. It is installed in more than 400 customers worldwide, including 20 of the world's top Telecoms. InfoSphere Guardium was the solution used to address the company's core data security gap by providing a scalable, cross-DBMS enterprise platform that both protects databases in real-time and automates the entire compliance auditing process. As a result a 239% ROI was estimated using business value assessment details provided by the customer.

Summary

Information governance can help Telecom's improve the quality and reliability of data to increase profitability, reduce unnecessary costs and risks. IBM offers half-day and two-day information governance workshops that can help your company prioritize and address real business problems and significant events. The workshop is an industry-specific engagement designed to share market trends and best practices and make recommendations to help establish or accelerate the information governance strategy for IBM's key clients.

1. Leverage IBM's experience with other clients in your industry and learn about their success stories
2. Compare your information governance adoption and strategy to your industry peers
3. Collaborate with IBM to establish an Information Governance Roadmap
4. Conduct a Business Value Assessment for identified key projects to quantify the business benefits

IBM also conducts POT (Proof of Technology) or POC (Proof of Concept) sessions to further demonstrate IBM's end-to-end, integrated capabilities and key competitive differentiators, either in parallel with or separate from information governance workshop activities.

For more information

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