



Tivoli software

Help protect the integrity of your business through IT governance and compliance management.



Middleware is Everywhere Can you see it?

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Introduction

During the past few years, corporate governance scandals, increasing IT threats and identity theft issues have helped trigger strong requirements for establishing and demonstrating business integrity. Organizations are struggling to respond to these mandates as the expanding global marketplace prompts them to integrate an ever-growing number of users, systems and services.

Companies have traditionally implemented a variety of approaches for addressing compliance. These efforts typically provide, at best, short-term fixes that lead to frustration as the scope of the problem continues to expand.

Leading organizations are discovering that the most pragmatic approach to addressing IT governance and compliance is to define, assess and manage the most critical IT processes that impact business integrity. Because the effectiveness and efficiency of these IT processes directly impact the quality of service that the IT organization provides, firms are formalizing this approach by undertaking IT service management (ITSM) initiatives.

An ITSM initiative provides an infrastructure on which IT processes can be performed consistently, reliably and predictably – to support the delivery of services to the business. ITSM relies on best practices – such as those outlined in the Information Technology Infrastructure Library (ITIL) or Control Objectives for Information and related Technology (COBIT) – to help build a management infrastructure that delivers business-critical IT services.

Highlights

IBM Tivoli IT Service Management provides a set of solutions to help automate, measure and enforce controls and processes

Treating compliance as a set of formally managed IT processes can ultimately make it a business enabler, because it can deliver significant benefits such as helping to streamline operations, minimizing total cost of ownership and providing the agility to proactively stay ahead of new initiatives.

This paper describes how IBM Tivoli® IT Service Management can help an organization address legislative and regulatory compliance issues by providing an integrated and sustainable approach to IT governance and compliance management. IBM delivers a wide-ranging approach – including hardware, software and business consulting – to help tackle IT service management. IBM Tivoli IT Service Management provides a distinct set of solutions to help automate, measure and enforce needed controls and processes.

Implement strong IT governance and compliance measures through controls management

Like many business initiatives today, the bulk of executing and tracking IT governance and compliance measures falls on IT. With IT embedded in nearly every aspect of an enterprise and users becoming increasingly dependent on IT resources, developing and maintaining a flexible, scalable, service oriented IT infrastructure is mission critical.

Proper IT governance and compliance necessitates the development of internal controls that deliver and evaluate performance against established business objectives in a measured way. In line with an established business strategy, IT organizations can adopt effective IT governance and compliance

“There is almost no way we could have complied with the new regulations in the same timeframe without Tivoli software. Using Tivoli software, it was a nonevent.”

— Michael Longest, Vice President, Technology Architecture and Engineering, First Citizens Bank

models that leverage IT control systems such as ITIL or COBIT. Such an effective model includes:

- Support for strategic decision making and communication.
- Practices to drive efficient execution based on strategic objectives.
- Measurement and control systems to assess, track and correct execution in accordance with strategy and policy.
- Systematic risk management.

Implementing controls helps maximize consistency – in processes and performance. Organizations can monitor performance against these controls for both internal knowledge and planning purposes, as well as in response to regulation-driven audits. IT governance and compliance management refers to this model of proactively implementing IT process controls and monitoring performance, while audits are the reactive analysis of these implemented IT process controls.

Rely on best practices

Proactively measuring IT governance and compliance depends on effectively managing relevant IT process controls. An organization must define, assess and monitor the status of IT processes to maintain desired levels of IT service, security, availability and performance. Such a process controls framework – based on best practices – can help effectively implement policies while providing a linkage to business controls, including controls over financial reporting.

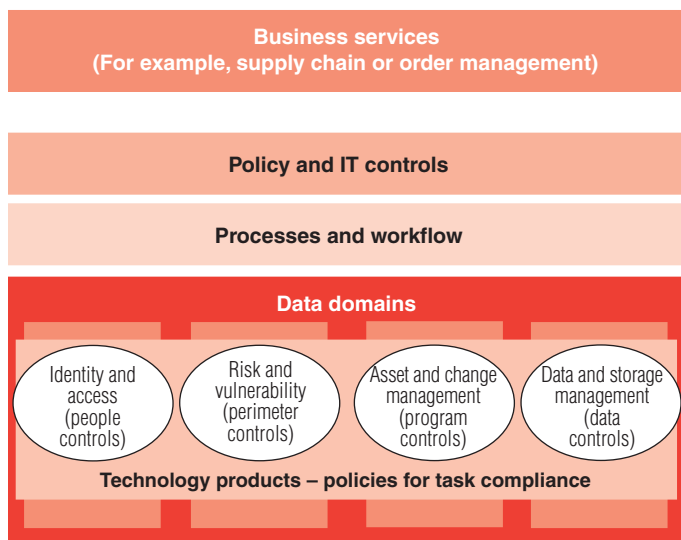
An IT process controls framework must help address elements such as:

1. **Confidentiality.** Protect sensitive information from unauthorized disclosure or intelligible interception.
2. **Integrity.** Safeguard the accuracy and completeness of information and software.
3. **Availability.** Make information and vital IT services available when required.
4. **Performance.** Provide information and services with a high level of efficiency.

There are many different process controls frameworks, or sets of guidelines for what controls are important and measurable in an organization. Some of the best-known controls frameworks include:

- Committee of Sponsoring Organizations of the Treadway Commission (COSO) — key financial controls framework.
- International Standards Organization (ISO) 9001 — quality control framework.
- COBIT — IT controls framework.
- ITIL — IT support framework.
- ISO 17799 — IT security framework.

The end goals for these controls frameworks are consistent: help maximize business integrity in the execution of IT services and corporate governance, and provide IT services to help protect against unauthorized access and unforeseen risks.



Compliance architecture elements

Establish a central IT governance and compliance platform to efficiently manage policies and requirements

A key strategic requirement for IT governance and compliance is the ability to integrate and automate the IT process controls an organization implements. When necessary information is spread across multiple systems and applications, it can be difficult to consistently deploy the proper controls for maximizing business integrity. A compliance strategy designed to address each of these various domains is important.

A life-cycle approach should also be taken: compliance policies should be defined, designed and implemented into applications, which in turn should be monitored for

compliance and reported on, so that an organization can take action to address any noncompliant items.

Highlights

Integrate compliance, application development, monitoring and reporting

An integrated IT governance and compliance management system helps enforce policies consistently across all domains and optimize operational costs and efficiencies. When an organization automatically applies the policies it establishes and defines to govern the access given to each group of users, it can simultaneously identify and report on settings that don't comply with these policies.

Explore an example

To better understand how an integrated IT governance and compliance management system helps enforce policies across the enterprise, let's examine a common controls example, in which a business wants to provide a closed-loop system for automating the management of sensitive business information. The CIO sets a policy to keep a particular set of critical business data for at least five years and prevent unauthorized disclosure of and access to it. IT managers establish IT process controls – data retention windows, access controls, mandatory baseline server configurations and more – to support this policy.

Manual controls are both inefficient and ineffective

But because most firms deploy these controls manually, two key problems can be introduced:

1. **The controls are deployed inefficiently.** For example, fully provisioning user access across heterogeneous resources — that is, determining which resources must be modified and who owns the resources, gathering the required approvals, implementing the changes and verifying on a repeatable basis that these and subsequent changes remain valid — takes far too much resource and time, with the initial provisioning process itself often taking a week or more to complete.
2. **The controls are deployed ineffectively.** Manually implementing policies across multiple resources can increase the likelihood of implementation disparities across heterogeneous systems.

Moreover, ongoing maintenance usually is handled by a variety of local administrators, who inadvertently or purposefully can cause noncompliances through common situations such as:

- Trying to manage available storage resources by allowing much shorter data retention windows.
- Neglecting to update the underlying systems with the latest application and security patch levels.
- Satisfying localized requests to allow additional users to access restricted data.
- Subverting policies that require users to reset their passwords regularly.

To avoid these potential threats to the availability of the restricted data in this example, the organization should address a number of challenges, which collectively can expose major IT process control problems:

1. How to detect noncompliance events without manually checking the settings of every system, user and user attribute on an ongoing basis.
2. Discovering noncompliance prior to the next audit event.
3. Remediating noncompliance automatically, in a closed-loop manner.
4. Documenting and auditing noncompliance without relying on spreadsheets that are updated by local administrators.
5. Notifying all relevant parties when hardware and software contracts and licenses are due to expire, to enable effective analysis of product use and facilitate effective renewal negotiation.

“As we outlined the policies and procedures needed to comply with regulatory requirements, we recognized that a new approach to identity management was vital and found IBM identity management technology to be the best solution to help solve our challenges.”

— Bo Linneke, TDC Services project manager, TDC Group

A key to addressing these issues is to automate these processes in a repeatable and auditable manner. When an organization uses IBM Tivoli software to automate these processes, it can capture best practices – by creating, customizing and storing workflows – to help minimize the costs of implementing and maintaining effective controls. These workflows facilitate business agility by helping an organization act quickly in response to change.

Drive value through IT governance and compliance management solutions

IBM Tivoli software offers comprehensive solutions that define, automate and monitor IT governance and compliance management in a repeatable manner across businesses of any size. The solutions span a range of IT processes – such as availability, configuration, security and storage management – that address IT governance and regulatory compliance projects. Based on the IBM Tivoli IT Service Management paradigm and executed through best practices – such as those defined by ITIL – these solutions seamlessly integrate with each other to help achieve an end-to-end view of IT governance and compliance measures.

Highlights

Adopt a modular approach for a manageable strategy with short- and long-term value

With IBM Tivoli IT governance and compliance management solutions, an organization can efficiently and effectively manage assets across organizations, provision and update resources appropriately, and track resource usage. All of these capabilities feed back into an IT governance and compliance business process framework. Using an integrated yet highly modular approach, an organization can address the process areas that generate the greatest value first, and then build out others as requirements evolve and change.

- Tivoli identity management solutions help maximize the effectiveness and efficiency of internal controls for provisioning, enforcing, managing and auditing user access to IT systems.
- Tivoli vulnerability management solutions help companies minimize technical risk factors such as security threats.
- Tivoli availability and release management solutions help mitigate risks to availability by implementing processes to support automated change management across systems.
- Tivoli storage and information life-cycle management solutions help companies meet data retention and change management requirements.
- Tivoli asset management solutions help enterprises optimize their asset investments by tracking assets and their usage, then integrating this information with contract and license information. Consequently, an organization can make good decisions and take informed actions about how to best use the assets and asset expenses to respond to the needs of the enterprise.

The challenge:

A Wall Street mutual fund company had an internal audit team evaluate its internal controls for access and use of its financial systems. The team found inadequate logging of conformance to the organization's security policies for managing risk and integrity data, and inadequate internal controls of user identity privileges.

The solution:

- *Tivoli Access Manager software controls access policies consistently across the applications and provides auditing of all authentication and authorization attempts.*
- *Tivoli Identity Manager helps control the life cycle of user accounts and privileges, and provides an audit trail of who has access to what and who approved it.*
- *IBM Tivoli Access Manager for Operating Systems helps enforce access policy across systems and provides an audit trail of who accessed what systems.*
- *IBM Tivoli Directory Integrator links authoritative sources for user attributes.*

The benefits:

Centralized, automated policies and processes to help control access and minimize security risks in accordance with set policies, which can free IT staff from routine security tasks to focus on higher business value activities.

Restrict unauthorized access through defined policies and data disclosure requirements

IT staff are taxed with the need to grant increasing numbers of users access to information and systems without putting business integrity at risk. To achieve audit compliance and eliminate the presence of invalid accounts, teams of IT staff must regularly audit each production server and application manually.

But IBM Tivoli security management solutions provide self-managing capabilities to regulate access, giving users simplified access to critical applications in compliance with security policies. Through Tivoli identity and vulnerability management solutions for security, an organization can control who gets access to what system and generate audit trails to prove and report on the effectiveness of IT security controls.

- IBM Tivoli Access Manager family lets an organization control IT resource and application access privileges across the enterprise — according to corporate policy and privacy requirements. Using a consolidated, policy-based approach to access control eliminates the need to manually code security into each application, and helps minimize deployment and administration costs.
- IBM Tivoli Federated Identity Manager facilitates collaboration between enterprises, customers and partners to provide security for service oriented architectures (SOAs). It extends management of access privileges to IT resources and applications across enterprise boundaries or security domains.
- IBM Tivoli Identity Manager provides a single point for creating and managing user accounts across resources. Through a robust workflow engine, Tivoli Identity Manager enables an organization to automate the user-provisioning process — including approvals and account creation — as well as the user-deprovisioning process to mitigate the risk of invalid accounts and privileges.
- IBM Tivoli Security Compliance Manager can help an organization detect security risks quickly and deal with them proactively. Tivoli Security Compliance Manager scans servers and workstations to verify whether IT security controls are in place and that the systems comply with security policy.

Highlights

Manage information from creation to disposal to maximize cost-efficiency and business value

Preserve and retain key business data

Information life-cycle management (ILM) is a critical element of IBM compliance management solutions. ILM helps an organization maximize the business value of storage and manage information from creation to disposal, eliminating unneeded points of management and helping reduce the number of physical devices in the infrastructure. IBM storage management solutions help an organization take into account its corporate governance policies, business processes and compliance guidelines as it establishes its ILM policies.

- IBM Tivoli Storage Manager can help automatically back up or archive key files to nonrewriteable, nonerasable storage when unprotected data or illegal files are detected. These capabilities help administrators identify key corporate data that is at risk for not being backed up or archived. An organization can also define policies that enable it to keep files for an amount of time it specifies, and then automatically expire them from its tiered storage.
- IBM TotalStorage® Productivity Center can help proactively monitor the storage infrastructure, enabling an organization to predict potential outages and rapidly resolve problems if and when they occur.
- IBM System Storage Archive Manager facilitates compliance with the most stringent regulatory requirements in the most flexible and function-rich manner. It helps manage and simplify the storage and retrieval of the ever increasing amount of data that organizations must retain for strict records retention regulations. Many of the regulations demand the archiving of records, e-mails, design documents and other data for many years, in addition to requiring that the data is not changed or deleted.
- The IBM System Storage Data Retention 550 (DR550) is a preconfigured, integrated offering to help store, retrieve, manage, share and retain regulated and nonregulated data.

Help optimize system utilization through controlled policies

A company's revenue growth and profitability increasingly depend on the availability of mission-critical business capabilities. Maintaining availability means that an organization needs to rapidly deploy software releases and patches, as well as frequently make PC and server configuration changes across complex IT environments. Organizations need a way to monitor the business impact of an IT outage and have real-time data to assess service level compliance. Often, however, there are no controls in place for configuration and change management processes. In the absence of controls, it can be difficult to link and define compliance processes to IT.

Deploy controls that link configuration and change management to business priorities

The challenge:

An audit of a regional insurance company identified problems with its IT controls. It revealed inconsistent application of settings and system configuration baselines, as well as inadequate documentation of system configurations, policies and standards.

The solution:

- *IBM Tivoli Business Systems Manager provides a real-time and predictive dashboard to monitor the processes aligned with compliance initiatives.*
- *Tivoli Monitoring software helps the organization automate the monitoring and remediation of potential problems.*
- *IBM Tivoli Event Console provides collection capabilities for audit logs and correlation of events.*
- *Tivoli Security Compliance Manager, Tivoli Provisioning Manager and Tivoli Configuration Manager help maintain and manage security baselines for servers and workstations.*

The benefits:

Accurate audit logs are used to detail configuration and system changes, which helps minimize the costs of assessments and the risks associated with overlooked recorded events.

In response to these challenges, IBM change and release management solutions offer automated capabilities to help simplify the continued optimization of systems. Maximize resource utilization in a controlled, policy-defined way.

- IBM Tivoli Configuration Manager enables an organization to capture and store workflows that represent best practices for distributing software and patches throughout the enterprise. By subscribing users, groups of users, end points, pervasive devices, profile managers or inventory query results to a particular reference model, an organization can drive automated compliance through standards and requirements.
- IBM Tivoli Provisioning Manager enables the automation of key data center tasks in accordance with the best practices of a particular enterprise or industry. This strategy helps operators effect change in a consistent manner that is compliant with predefined policies. In addition, Tivoli Provisioning Manager can help deploy and maintain software elements — including operating systems, patches, middleware and applications — at desired configuration levels.

IBM Tivoli availability management solutions leverage a centralized view that lets an organization monitor and manage linkages between IT systems and business processes.

- IBM Tivoli Monitoring links IT services to processes, data, skills and tools through a single-user workspace, allowing organizations to view consistent data across technology domains and align IT services with business goals to deliver immediate value.

Highlights

IBM business system management solutions help an organization understand how the performance and availability of IT resources affect applications, processes and services. The solutions help prioritize systems around processes that carry the highest business values.

- IBM Business Systems Manager lets an organization monitor and manage IT resources within the context of business priorities. Through an executive dashboard, organizations can easily view the availability of their most critical business services and any associated service level agreements. With this real-time information, they can make IT resource decisions to help minimize the high cost of application downtime and optimize business impact.

Address challenges associated with software contract compliance and renewal negotiation

Manage software inventory and use

Managing the hundreds or thousands of software applications running within an environment – and the contracts related to these applications – remains a complex undertaking. Few IT organizations possess the resources to manually track software inventory and use, or maximize related compliance – for both the distributed and mainframe platforms – to quickly adjust to business needs. When it comes time to renew agreements, many IT professionals struggle to retrieve contract details stored across multiple departments. As a result, they

Highlights

often have difficulty reporting software inventory and use activity links to contract terms to prove compliance, which can lead to failed audits.

- IBM Tivoli Contract Compliance Manager provides end-to-end software asset management to help simplify these tasks by storing all contracts in a central database. It helps organizations validate invoice information; report on financials enterprise wide; validate product installation, removal and unauthorized use; and facilitate disaster recovery planning. It also enables planning for upgrades and consolidations.
- IBM Tivoli License Compliance Manager for z/OS® and IBM Tivoli License Manager combine with Tivoli Contract Compliance Manager to automate the collection of end-to-end measurements of installed software and product use, and thereby facilitate compliance reporting on both host and distributed platforms. In Tivoli Contract Compliance Manager, this critical data can be linked to existing contracts and license entitlements to support internal and external audit processes. The data can also be used to facilitate decision making about the best use of the assets and asset expenses to respond to the needs of the enterprise.

Gain the flexibility to respond to today's regulations — and tomorrow's as well

Summary

Taking a proactive approach to compliance and governance can give an organization the agility it needs to respond to the variety of regulations it faces – both today and in the future. A centralized, automated approach not only enables organizations to effectively control information and rapidly make it available to meet audit requirements, but also facilitates enforcement that helps protect the integrity of the entire IT infrastructure – while enhancing customer, partner and employee relationships.

IBM Tivoli integrated compliance management solutions help enterprises maximize their existing and future technology investments through IBM Tivoli IT Service Management. These solutions complement other IBM solutions (including IBM Lotus® and IBM DB2® software and IBM Business Consulting Services) to support a wealth of other IBM hardware and software offerings. A robust compliance management infrastructure from IBM can ultimately become a key business enabler – providing the flexibility and integration required to quickly adapt to changing market requirements and capitalize on new opportunities.

For more information

To learn more about IBM compliance management solutions or to find out how IBM can help you develop a compliance strategy to meet your unique business requirements, contact your IBM representative or IBM Business Partner, or visit ibm.com/tivoli/solutions



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