



 What makes you special?

# IT Governance and Compliance Solutions for System Management



**Marc van Zadelhoff**  
*IBM Tivoli Business Development*



IBM Governance and Risk Management   
Business alignment, visibility and control

# CIO's Top Priorities Are to Deliver Business Agility/Innovation While Retaining a Resilient Business

## Complexity



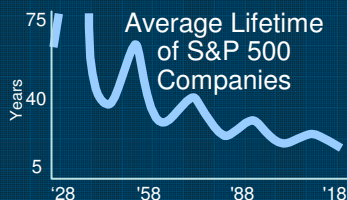
Increased complexity makes change much harder

## Compliance



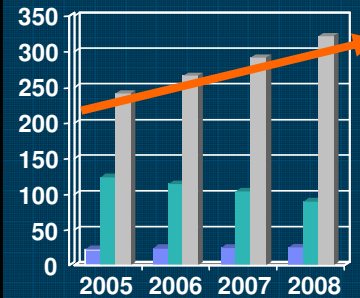
Changing regulatory environment requires security, privacy and ongoing audit capabilities

## Change



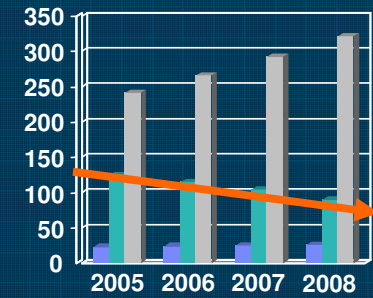
Increased competitive pressure while IT has an increasing role in every business process

## Rising Cost of Operations



The cost of operations continues to increase at 10% CAGR ... twice the rate of the IT budget

## Inability to Innovate



Increased focus on development project spend due to higher % of costs going to keeping the lights on ... creates a dual focus of doing the right thing and doing things well

## What is Compliance?

- Compliance
  - Acting according to certain accepted standards
    - Princeton University WordNet  
<http://wordnet.princeton.edu/perl/webwn?s=compliance>
  
- Regulatory Compliance
  - The combined set of organizational capabilities, processes, supporting infrastructure and tools, data and information, and operational and financial controls required to satisfy the requirements set forth by all applicable regulatory agencies

# Key Regulations Affecting IT and Compliance

## Privacy Regulations

1999 Gramm-Leach-Bliley Act (GLBA) US	2000 PIPEDA Canada	2000 COPPA and CIPA US	2003 California Individual Privacy (SB1386) California	2006 <b>PCI DSS v1.1</b> <b>Industry</b>
1987 Computer Security Act US	1995 EU Data Protection Directive EU	1996 HIPAA US	1997 Personal Health Information Act Canada	1998 Data Protection Act UK

## Financial Integrity and Solvency Regulations

2005 8th Company Law Directive (Euro SOX) EU	2006 Financial Instruments and Exchange Law (J-SOX) Japan	2012 Solvency II EU
2002 Sarbanes-Oxley Act US	2002 Corporate Law Economic Reform Program Australia	2003 Basel II EU

## Other Regulations

2006 Federal Rules of Evidence US
2001 USA PATRIOT Act US

# CIOs with effective IT governance...

## Enhance business performance

- *Maintain visibility of end to end service to help ensure service quality*
- *Improve time to value and manage costs of strategic initiatives*

## Improve business resilience

- *Reduce risks and protect confidential intellectual property*
- *Minimize and control impact of planned and unplanned disruptions*

## Achieve compliance

- *Create alignment with internal and external policies and regulations*
- *Effectively prioritize and get more value from IT investments*



The screenshot shows the Washington section of The New York Times website. The main article is titled "In Turnaround, Industries Seek U.S. Regulations" by Eric Lipton and Gardiner Harris, published on September 16, 2007. The article discusses how industries are pushing for federal regulations after years of favoring a hands-off approach. A multimedia section includes a graphic titled "Push for Regulations from Unlikely Sources" and a sponsored article titled "once in Theatres Now".

## Your Strategic IT Initiatives are the Starting Point *And Catalysts for Making Improvements*

### Service Management

- Enterprise Architecture
- Service Quality Management
- Change Management

### Business Resilience

- Availability Management
- Business Continuity
- Disaster Recovery

### Security

- Corporate Information Security
- Identity and Access Control
- Data governance and compliance

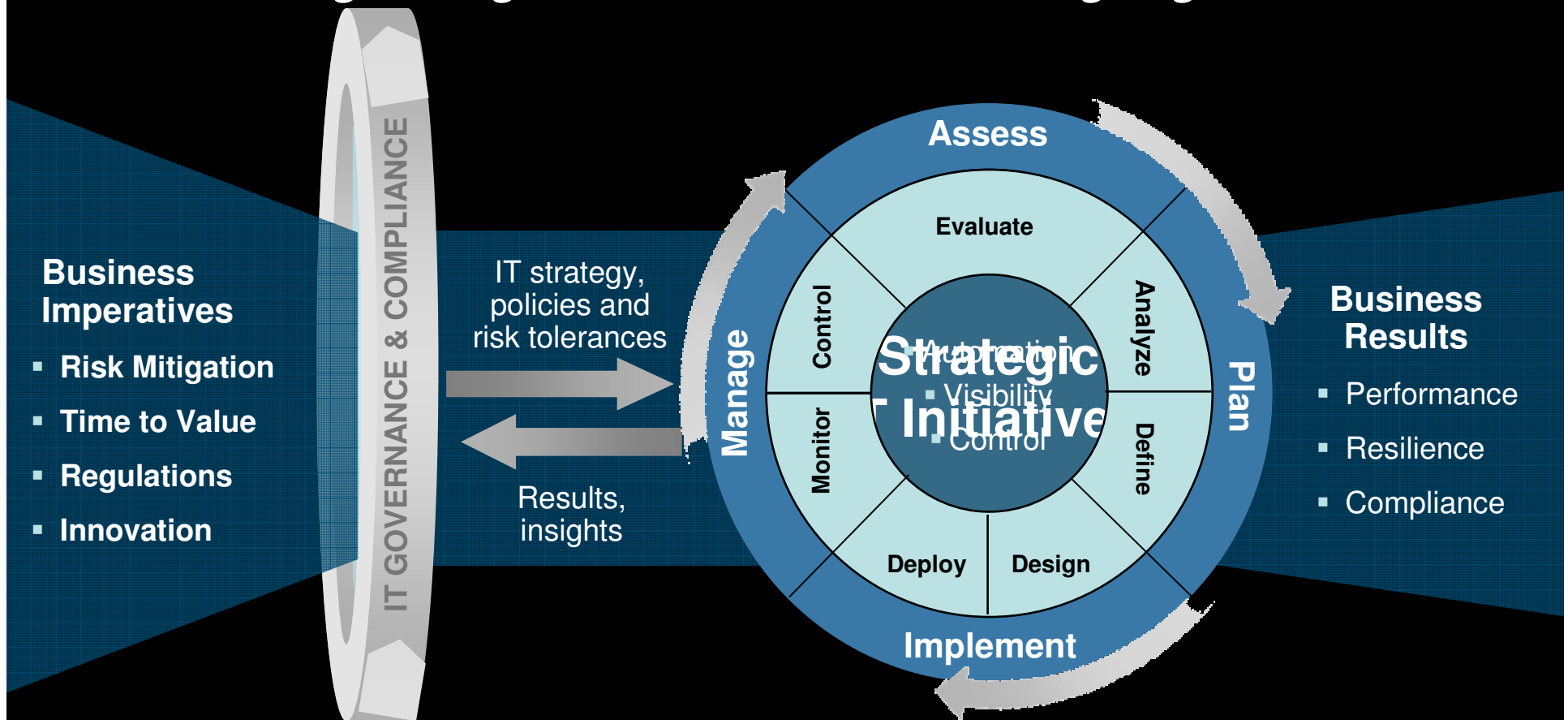
*\*CIO Note: Establishing an enterprise wide architecture initiative is an important project for enabling better IT governance and compliance.*

# IBM Process Approach to IT Governance and Compliance

*Putting policy into practice via process*

***“Do the right things...”***

***“...and do things right”***



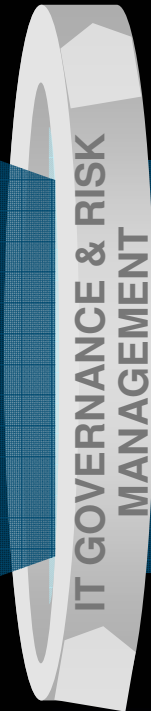
*Based on Industry Best Practices and IBM experience*

## 5 Steps to Good Governance

1. Standardize on a process for applying IT governance and risk management —helps ensure you have the supporting implementation expertise and technology to make it actionable
2. Choose one IT initiative that makes sense – you don't need to tackle IT governance and risk management generally—focus on specific programs or initiatives as catalysts for making improvements

### Business Imperatives

- Risk Mitigation
- Time to Value
- Regulations
- Innovation



### Strategic IT Initiatives

### Frameworks and Best Practices:

CoBIT  
ITIL v3  
Val IT  
eTOM

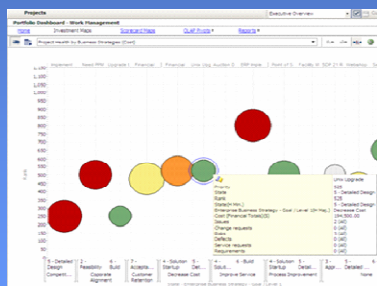
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# 5 Steps to Good Governance

## Implement 'Audit Ready' Visibility and Control

3. Establish key dashboards for visibility across IT silos to monitor and measure project outcomes relative to objectives, policies and risk tolerances
4. Implement fine-grain process and management controls and automate where possible to help eliminate human error and improve process consistency
5. Underpin your enterprise architecture with a standards-based data integration and data sharing platform that spans development and operations processes with common workflow and policy integration



**IT Development**

**IT Business Management**



**IT Governance and Compliance**

**IT Operations**



# IBM's Approach to Service Management

## *Architected to Clarify Prioritization and Improve Efficiency*

**Enable service priority and leverage best practices:**  
Process management supports organization automation and alignment with business goals

**Bridge silos and reduce friction:**  
Provides a collaborative team-based software delivery platform to reduce friction

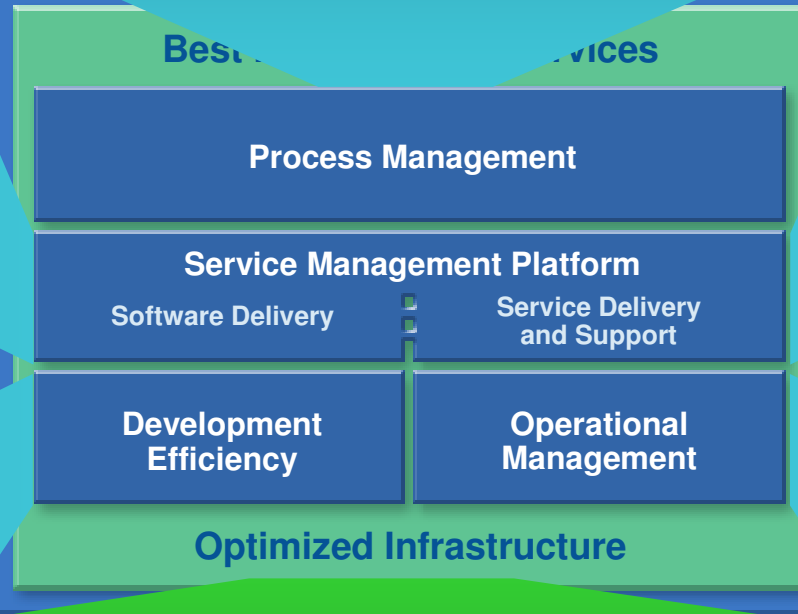
**Visibility to information & service context:**  
Service delivery and support platform serves as the foundation for automation

**Accelerate tasks and improve effectiveness:**  
Automate development and delivery tasks

**Receive service context:**  
Operational management products deliver task level automation

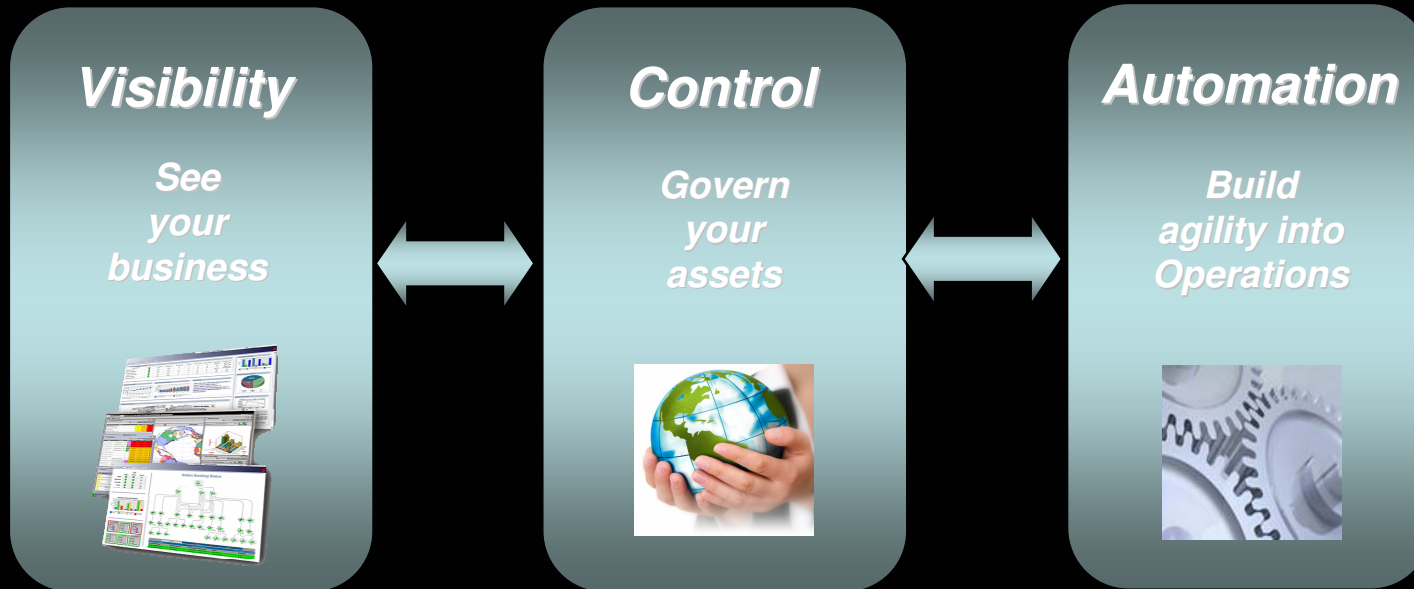
**Gain insight, establish best practices:**  
Identify opportunities for added efficiency, business value and growth

**Leverage** flexible, reliable, available, and secure resources



# IBM Service Management (ISM)

*An Integrated Approach to Getting Business Results*



*Only IBM delivers integrated visibility across Business & IT Audiences.*

e.g. Contextual LoB, Compliance, Security, Service, & Domain Dashboards

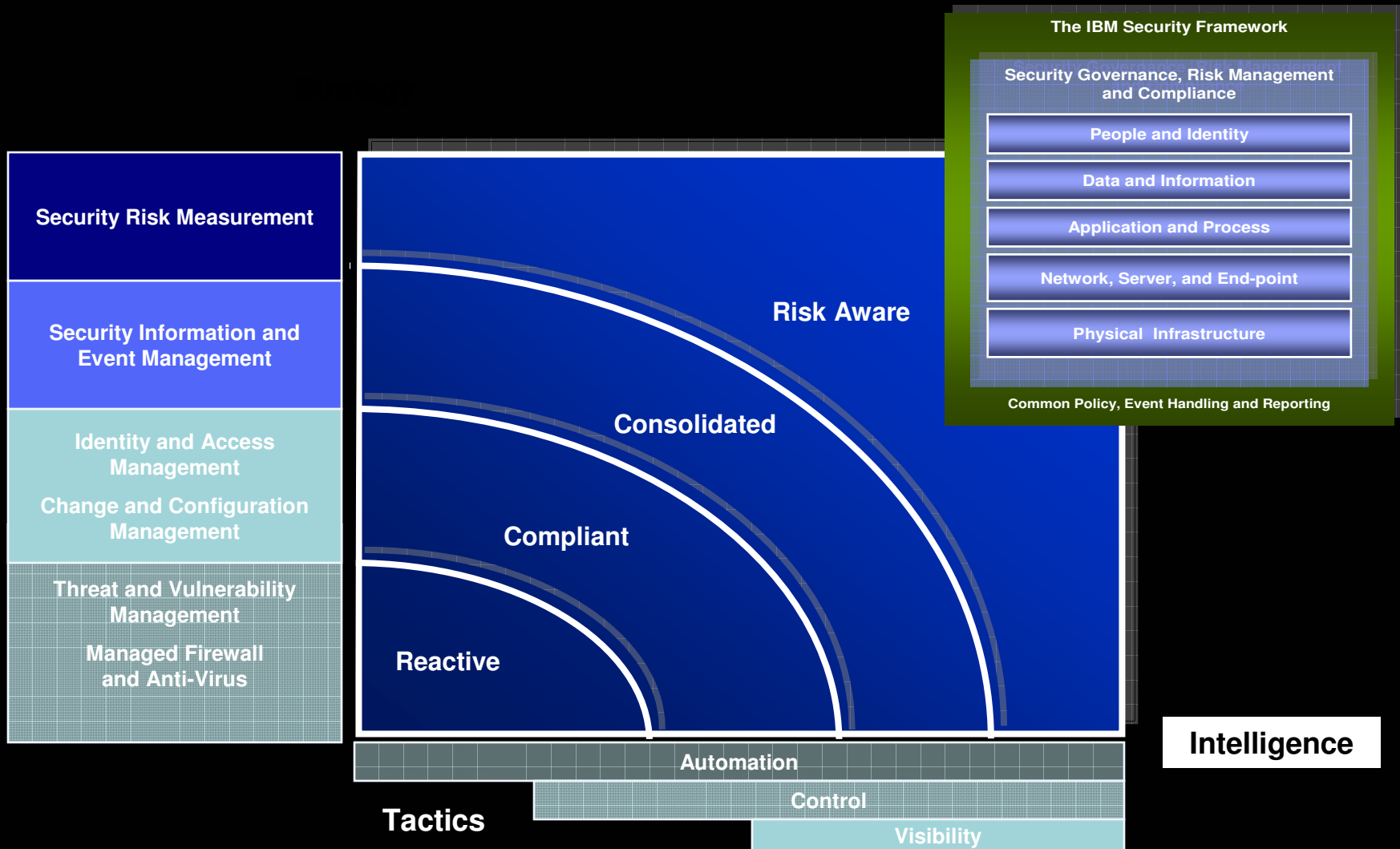
*Only IBM delivers integrated control across Business & IT Assets.*

e.g. EAM, IT Asset Mgmt, Change & Config, Access & Identity Mgmt, Data Mgmt.

*Only IBM delivers integrated automation across Business & IT Operations.*

e.g. Enterprise Ops, Service provider Ops, IT Ops, Security Ops, Storage Ops...

# ISM – From reactive security to risk aware enterprise



# The IBM Security Framework

*on-demand protection to stay ahead of outsider and insider threats*

## The IBM Security Framework

Security Governance, Risk Management  
and Compliance

People and Identity

Data and Information

Application and Process

Network, Server, and End-point

Physical Infrastructure

Common Policy, Event Handling and Reporting



### • SECURITY COMPLIANCE

- Demonstrable policy enforcement aligned to regulations, standards, laws, agreements (PCI, FISMA, etc..)



### • IDENTITY & ACCESS

- Enable secure collaboration with internal and external users with controlled and secure access to information, applications and assets



### • DATA SECURITY

- Protect and secure your data and information assets



### • APPLICATION SECURITY

- Continuously manage, monitor and audit application security



### • INFRASTRUCTURE SECURITY

- Comprehensive threat and vulnerability management across networks, servers and end-points



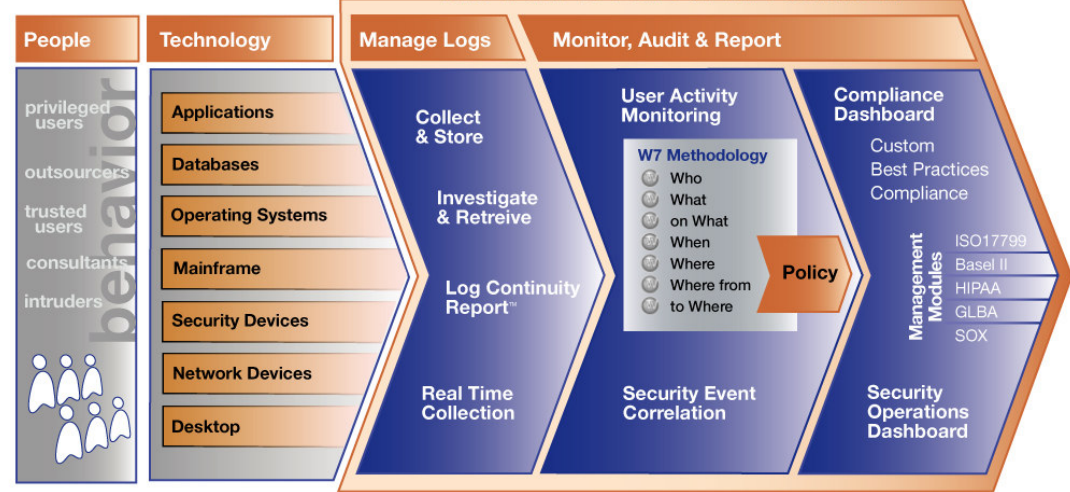
# Security Compliance

Aligning IT security to business priorities

## Goals

- Proactive real-time monitoring of network & systems for compliance with security policies
- Monitor platforms from mainframe to distributed & devices
- Historical reporting to demonstrate compliance
- Clearly define & communicate potential security incidents so they can be handled correctly
- Ensure that preventive, detective and corrective measures are in place to protect information systems & technology from malware

## The IBM Tivoli SIEM Solution



## IBM solutions

- Tivoli Security Information & Event Mgr.
- Tivoli Compliance Insight Manager
- Tivoli Security Operations Manager
- Tivoli Security Compliance Manager
- Tivoli zSecure suite

## Capabilities for IBM Security & Privacy

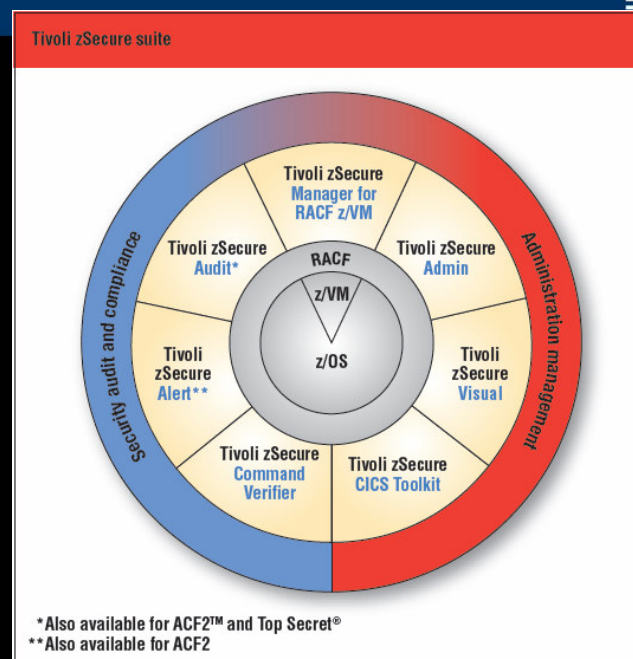
- **Tivoli Compliance Insight Manager**
  - Roll-your-own compliance modules thru wizard for advanced report definition
  - Flexible automated report distribution
  - Advanced toolkit for adding new log collectors, parsers, and normalization
  - Integrates with Tivoli Identity Manager & Tivoli Access Manager for event collection and reporting
  - Agentless iSeries event collection and reporting
- **Tivoli zSecure suite**
  - Fingerprinting and modification detection of z/OS sequential datasets
  - Support for new DB2 V9 audit events
  - XML based reporting enhancements and documentation
  - New component released in Sept 2007: zSecure Manager for RACF z/VM

# IBM Tivoli zSecure Suite

The Tivoli zSecure suite adds a user-friendly layer onto the mainframe that enables superior administration coupled with audit, alert and monitoring capabilities for Resource Access Control Facility (RACF)

## Key Features

- The zSecure suite improves the efficiency of mainframe administration and enhances the ability for the mainframe to be the hub of enterprise security.
- Administration and provisioning:
  - zSecure Admin enhances user management
  - zSecure Visual offers a Microsoft® Windows® GUI
  - zSecure CICS Toolkit for simplified RACF security management
  - zSecure Manager for RACF z/VM provides combined audit & admin for VM environment
- Audit, monitoring and compliance:
  - zSecure Audit provides event detection, analysis & reporting and system integrity audit & analysis
  - zSecure Alert provides intrusion detection and alerting
  - zSecure Command Verifier offers automated security monitoring

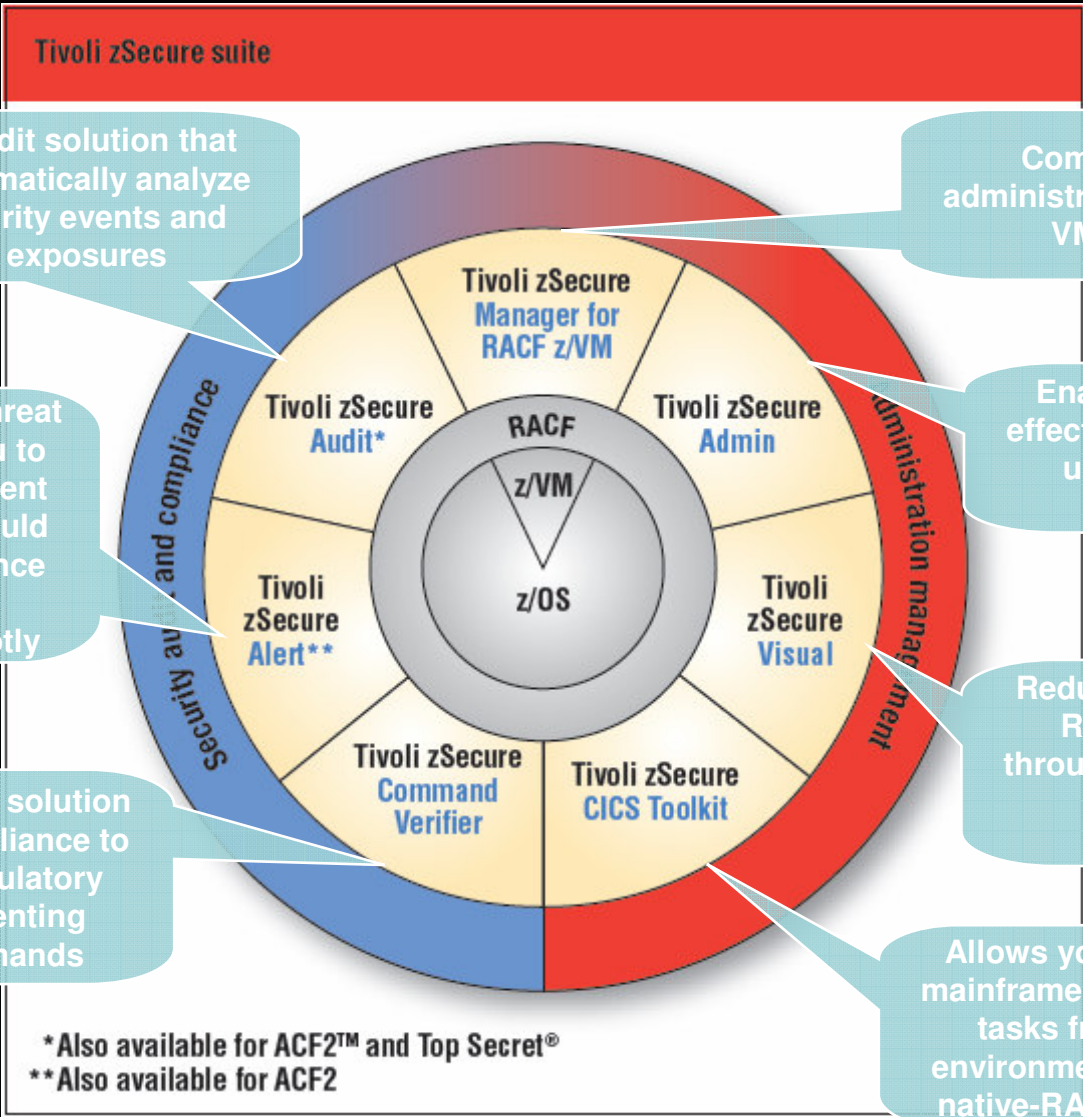


## Benefits Summary

- Administration and provisioning:
  - Reduce administration time, effort and cost
  - Reduce training time needed for new administrators
- Audit, monitoring and compliance:
  - Helps to pass audits more easily
  - Can improve security posture
  - Save time and costs through improved security and incident handling
  - Can increase operational effectiveness



# Introducing the IBM Tivoli zSecure Suite

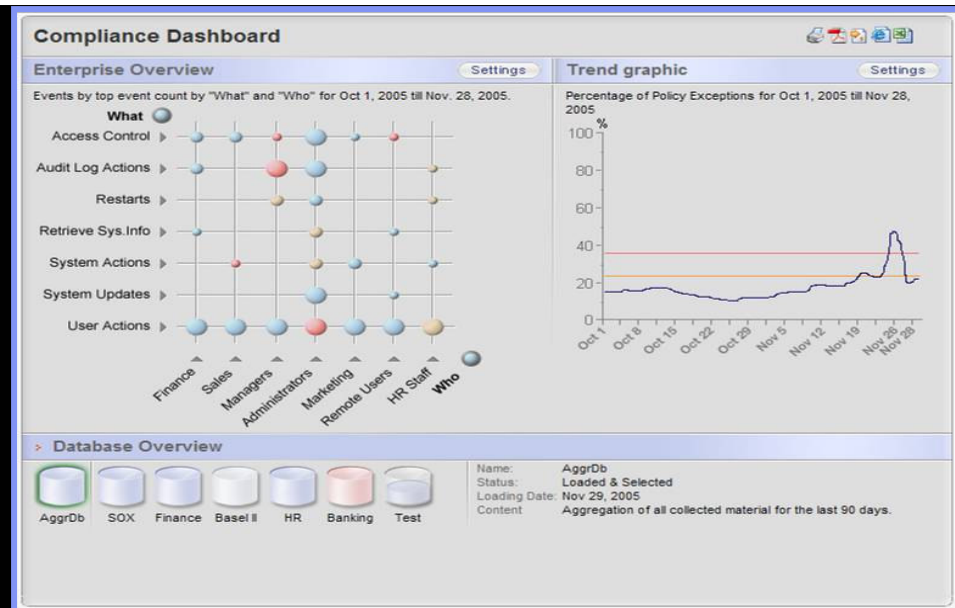
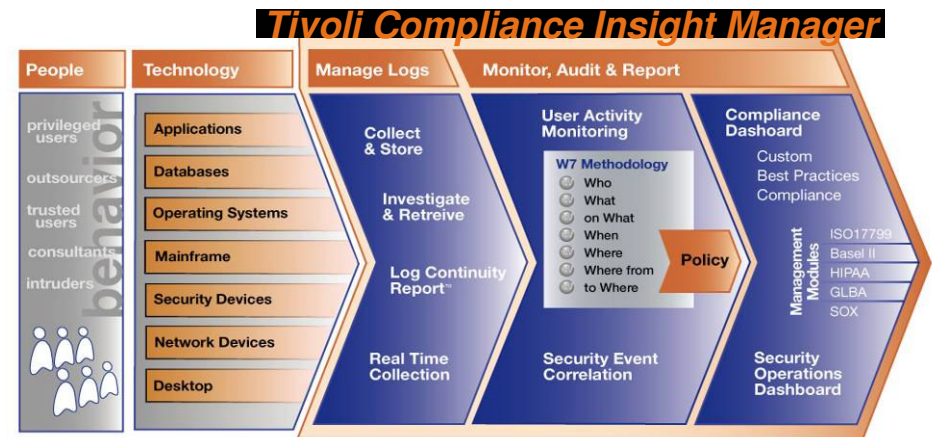


# Assessing and Monitoring Compliance: Tivoli Compliance Insight Manager

Tivoli Compliance Insight Manager provides an enterprise security compliance dashboard with in-depth privileged user monitoring capabilities, all powered by a comprehensive log and audit trail collection capability

## Key Features

- Compliance management modules and regulation-specific reports
- Unique ability to monitor user behavior, including PUMA (Privileged User Monitoring and Audit) reporting
- Broadest, most complete log and audit trail capture capability
- W7 log normalization translates your logs into business terms
- Easy ability to compare behavior to regulatory and company policies – auditors no longer need RACF expertise to monitor activities
- Enabler event source integrates the OS and mainframe database events into TCIM's enterprise compliance dashboard



# Integration with Tivoli Security Operations Manager

Tivoli Security Op

Dashboard Reports Tools Options Admin

Visuals Window Help

PowerGrid
14:56:05 CHART REFRESH CONFIG

	Src Threat	Dst Threat	Protocol	Src IP	Dst IP	Src Port	Dst Port	Domain	Src Watchlist	Dst Watchlist	EAM Time	Sensor Time	ID
ued SPECIAL command - SPECIAL authority	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT					
cess using SECURITY by user without SECUR	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT					
a set access using READALL by user withou	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT					
IBMUSER accessed data set with OPERATIC	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT			2007/03/19 20:05:49	2007/03/19 20:05:49	5043729343401951233
IBMUSER accessed data set with OPERATIC	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT					
IBMUSER accessed data set with OPERATIC	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT					
IBMUSER accessed data set with OPERATIC	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT					
ata set access using NON-CNCL by user wit	33	33	17 (UDP)	0.0.0.0	0.0.0.0	0	0	DEVICE SUPPORT					

http://tutti - Event #5043729343401951233 - Mozilla Firefox: IBM Edition

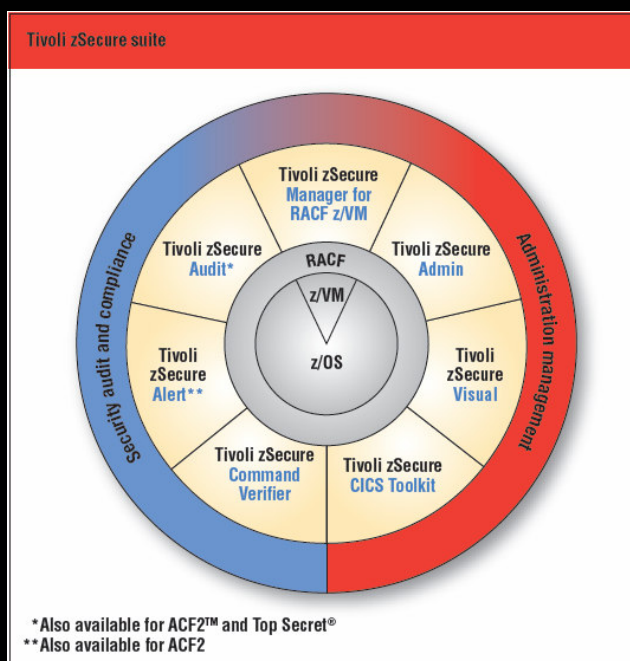
**Event #5043729343401951233**

Field	Value
<b>EAM Time</b>	Time this event was received by the EAM (according to the EAM's clock).
<b>Sensor Time</b>	Time the sensor detected this event (according to the sensor's clock).
<b>Sensor Name</b>	Name of the Sensor that reported this event.
<b>Sensor Type</b>	Type of Sensor that reported this event.
<b>Protocol</b>	Protocol number of the event.
<b>Source IP</b>	Source address of this event.
<b>Destination IP</b>	Destination address of this event.
<b>Source Port</b>	Source port of this event.
<b>Destination Port</b>	Destination port of this event.
<b>Event Type</b>	Type of event.
<b>Event Class</b>	Class of event.
<b>User Name</b>	User name.
<b>User Context</b>	User context.
<b>Info</b>	Additional information associated with this event.

Real time RACF and  
 ACF2 monitoring  
 leveraging Tivoli zSecure  
 Alert

# A cornerstone for Tivoli's System z Security Strategy

## IBM Tivoli zSecure Suite



**Enterprise Security Monitoring and Audit Reporting**

**Enterprise Identity and Access Management**

**Tivoli Compliance Insight Manager (TCIM)**

**Tivoli Security Operations Manager (TSOM)**

**Tivoli Identity Manager (TIM) for z/OS**

**Tivoli Federated Identity Manager (TFIM) for z/OS**

**Tivoli Directory Server (TDS) for z/OS**

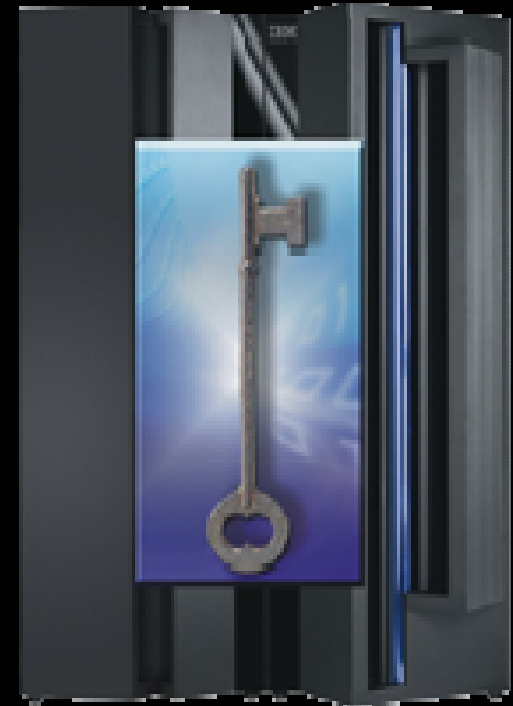
**Tivoli Directory Integrator (TDI) for z/OS**

\* Also available for ACF2 and Top Secret  
 \*\* Also available for ACF2



# Enterprise Security Hub Solution

- IBM offers the total solution for the enterprise security hub
  - Most secure and resilient hardware platform, providing reliability, availability, and scalability
  - Integrated security features in the operating system, including digital certificates and PKI
  - Data and communications encryption with support from ICSF and local key management
  - Most reliable security server
  - Most comprehensive mainframe security administration & audit
  - Comprehensive enterprise SIEM dashboard for audit and compliance management
  - Enterprise-wide identity and access management solutions in Tivoli security portfolio
  - Security, recoverability, and scalability to support centralized services offerings for SOA implementations



# Make Synchronizing Business and IT Actionable

## *Supporting the IT Governance and Compliance Lifecycle with Measurable Business Value*

**1**

### **Enhance business performance**

- *Maintain visibility of end to end service and ensure service quality*
- *Improve time to value and manage costs of strategic initiatives*

**2**

### **Improve business resilience**

- *Reduce risks and protect confidential intellectual property*
- *Minimize and control impact of planned and unplanned disruptions*

**3**

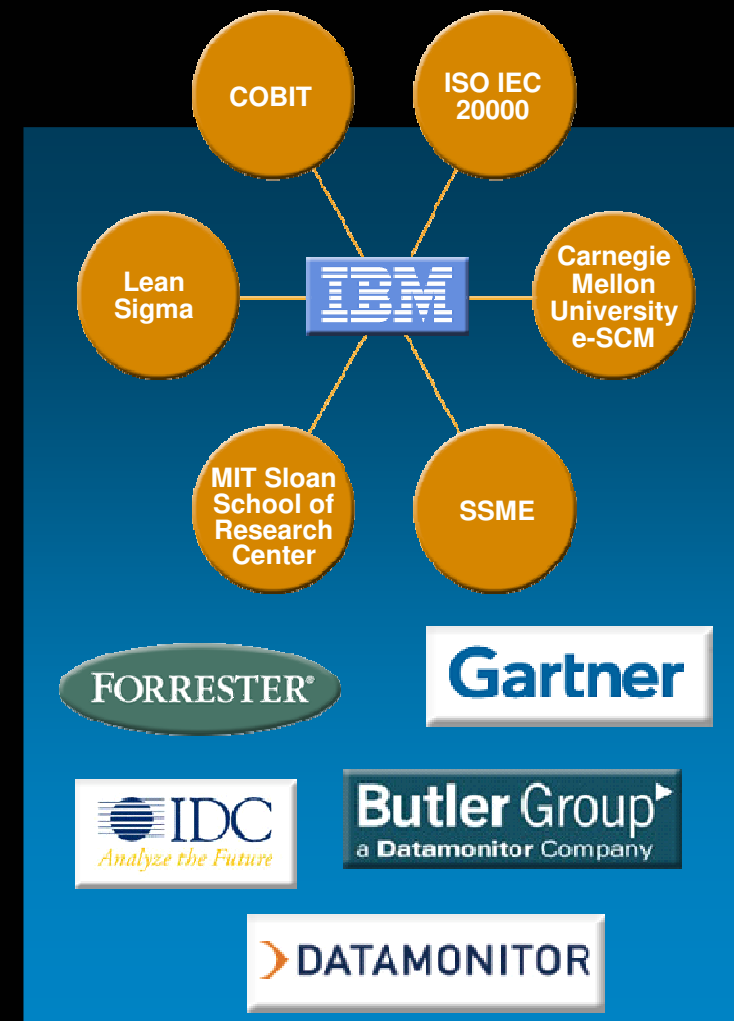
### **Achieve compliance**

- *Create alignment with internal and external policies and regulations*
- *Effectively prioritize and get more value from IT investments*

# IBM Leadership

## *Around Service Management in the Market Includes ...*

- 25 years of thought leadership with thousands of customer engagements
  - Continued leadership in support of open standards
- IBM leadership with customers:
  - Finance: 96 of top 100 customers
  - Communications: 20 of top 20 customers
  - Healthcare: 9 of top 10 customers
  - Retail: 8 of top 10 customers
- Leadership in multiple analyst categories
  - WW operations leader five years in a row
  - Application lifecycle mgmt tools market leader
  - IT Systems Management leader



## Why IBM?

### **Breadth and Depth of Solution**

Only vendor that delivers breadth of security and compliance capabilities to address infrastructure, applications, information, people and identities

### **Extensive Integration**

Integrates with all types of business data (structured, semi-structured, and unstructured) for addressing information & data security needs and all major application types (web, legacy, and ESB for SOA) for securing business process

### **Open Standards**

Open security platform and leadership in Web Services security, policy management and federated identity

### **Product Leadership**

Analyst attested leadership in markets for user and infrastructure security and compliance software and services.

### **Best in class System z security**

Leadership in mainframe security with RACF, z/OS security, identity & access and compliance enabling clients to leverage System z as the enterprise security hub

### **A core element of IBM Service Management**

Security integration with key ITIL processes out of the box: Incident, Problem, Change, Release, SLA, Configuration, Availability.

### **Breadth of Service Management offering**

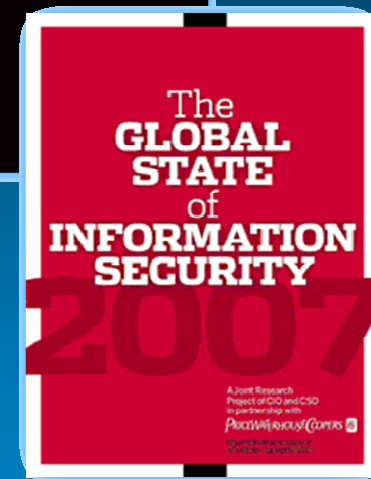
IBM offers full breadth of end-to-end asset and service management solutions that operate on a common web services infrastructure.



*Thank You*

## Impact of a Breach

- Average annual loss up 80% over 2006
- Financial Fraud overtook Virus Attacks as the greatest source of losses
- Data breach-related attacks rank #1, 3, 4, and 5 as most costly incidents by dollar amount
- 43% of U.S. companies have no overall security strategy
- Employees beat hackers as the most likely security incident source
- 46% of respondents suffered a security incident



*Just released: FBI/CSI Survey,  
PricewaterhouseCoopers Studies*

Sources: CSI Computer Crime and Security Survey 2007;  
Global State of Information Security 2007



# Identity & Access Management

*Manage users, identities, access rights, enforce & monitor user activity on all IT systems*

## Goals

- Enable single sign on
- Manage identity lifecycle: provision, deprovision.
- Monitor account activity: dormant accounts, irregular activity.
- Review / recertify access periodically
- Automate manually-implemented processes for controlling access to IT resources
- Centralize access policy and related internal controls
- Properly verify authenticity of all users based on potential liability

## IBM solutions

- Tivoli Identity Manager
- Tivoli Access Manager
- Tivoli Federated Identity Manager
- Tivoli zSecure Suite

IBM Tivoli Federated Identity Manager  
 Business Gateway

IBM Tivoli Compliance Insight Manager

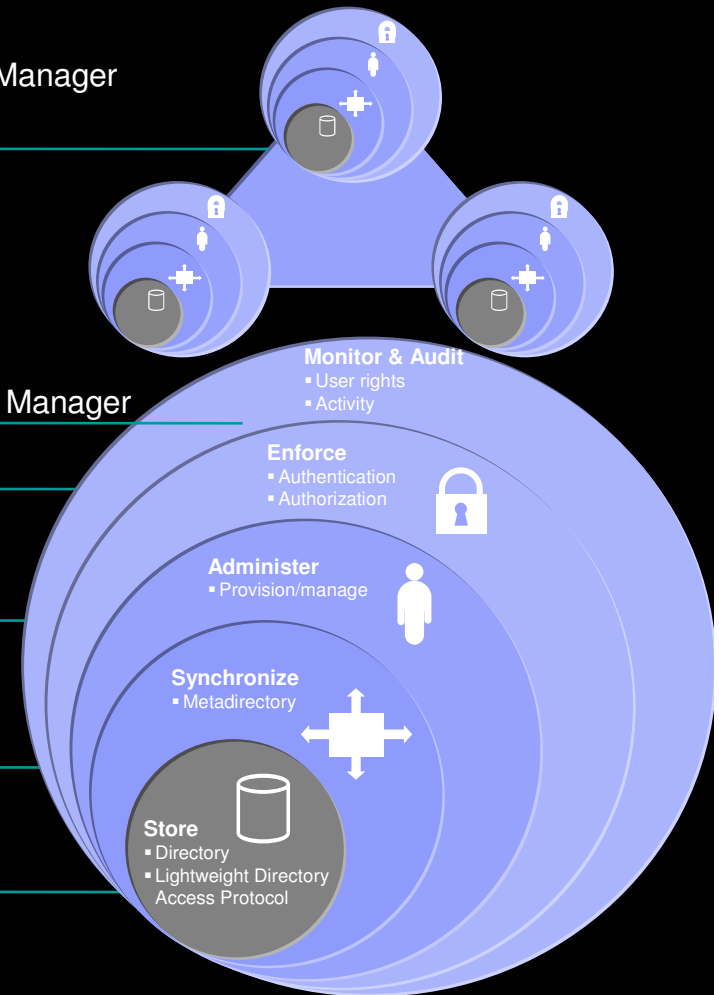
IBM Tivoli Access Manager

IBM Tivoli Identity Manager

IBM Tivoli zSecure suite

IBM Tivoli Directory Integrator

IBM Tivoli Directory Server





# Data Security

*Protecting a critical enterprise asset*

## Goals

- Comprehensive protection for all data and information in the enterprise – structured, unstructured and semi-structured data
- Facilitate the discovery, classification, defense, and monitoring of critical intellectual property and sensitive enterprise information in disparate information stores (databases, email, laptops, pervasive devices, etc.)

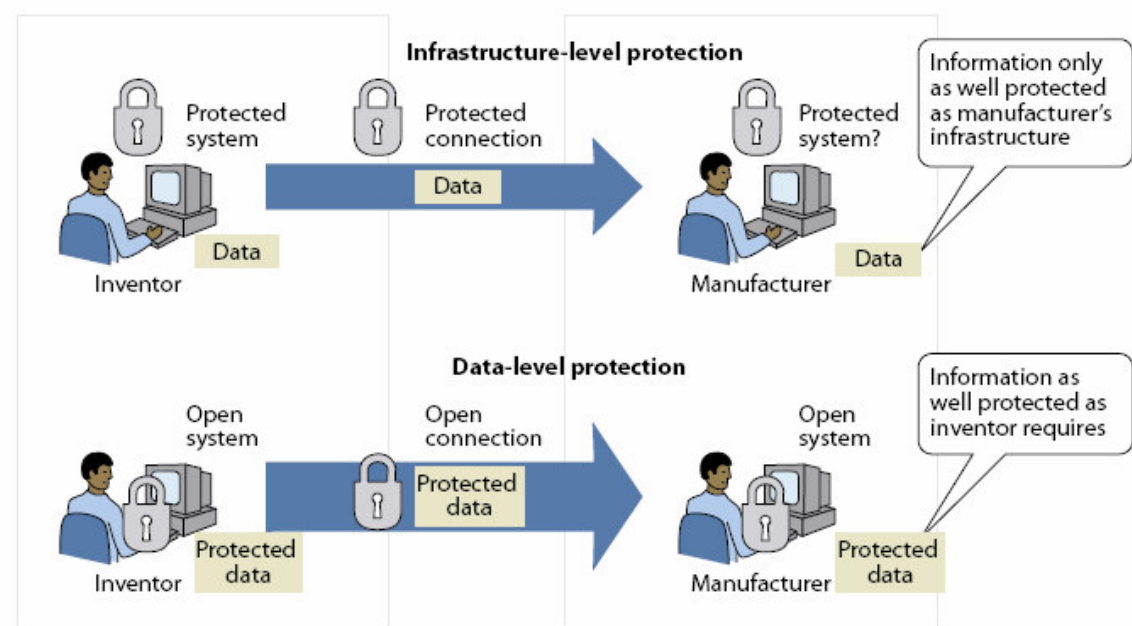
## IBM solutions

- Tivoli Access Manager
- IBM FileNet P8 with Records Crawler and IBM Classification module
- Tivoli zSecure suite
- Tivoli Key Lifecycle Manager (2008)

## Old Security model

- Defensive, threat-protection oriented
- Manual, audit-based policy enforcement
- Focused on securing infrastructure

**Figure 1** Data-Level Protection In An Inventor-Manufacturer Relationship

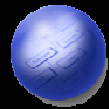


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Source: Forrester Research, Inc.

## New security model

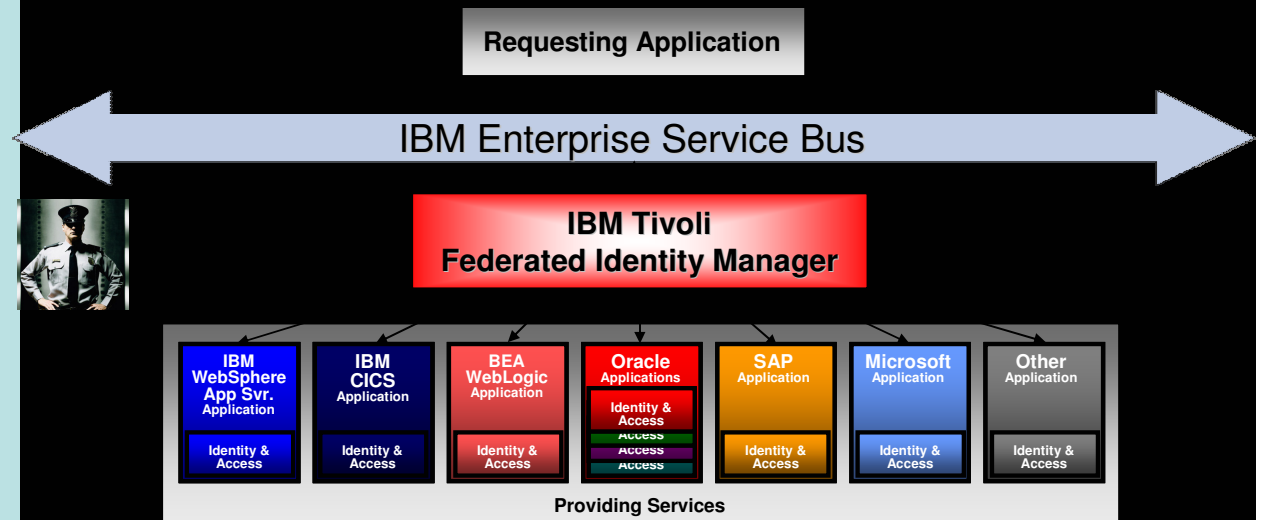
- Securely designed from the ground up
- Automated policy enforcement
- Focused on securing data



# Application Security - SOA

## Goals

- In an SOA environment, provide secure access and federate identity across these services
- Externalize core security services from the application
- Ensure security administrators make changes NOT developers.
- Ensure changes to security are auditable



## IBM solutions

- Tivoli Federated Identity Manager
- WebSphere Enterprise Service Bus (ESB)
- WebSphere Message Broker
- WebSphere DataPower

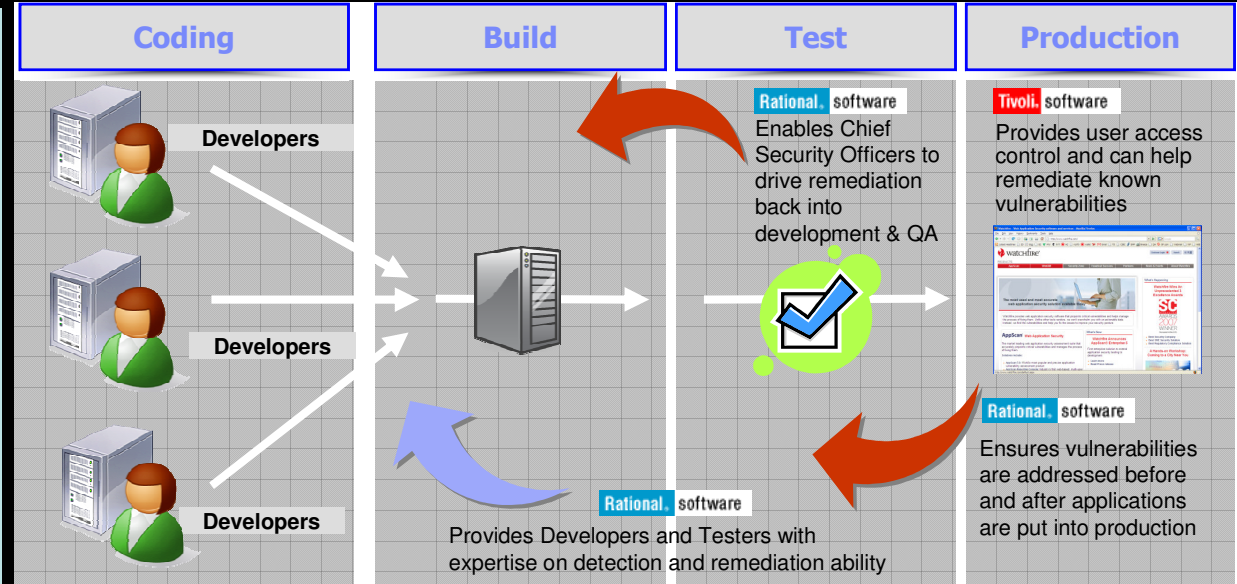


# Application Security – vulnerability management

*Security policy management for an application from creation through production.*

## Goals

- Define application security standards and requirements
- Build security into app design and model threats
- Build and test individual and composite applications
- Configure infrastructure for application policies; deploy applications in production
- Continuously manage, monitor and audit application security



*Rational AppScan & Tivoli provide security that spans the application lifecycle*

## IBM solutions

- Rational AppScan
- Tivoli Access Manager
- Tivoli Federated Identity Manager
- Tivoli Identity Manager



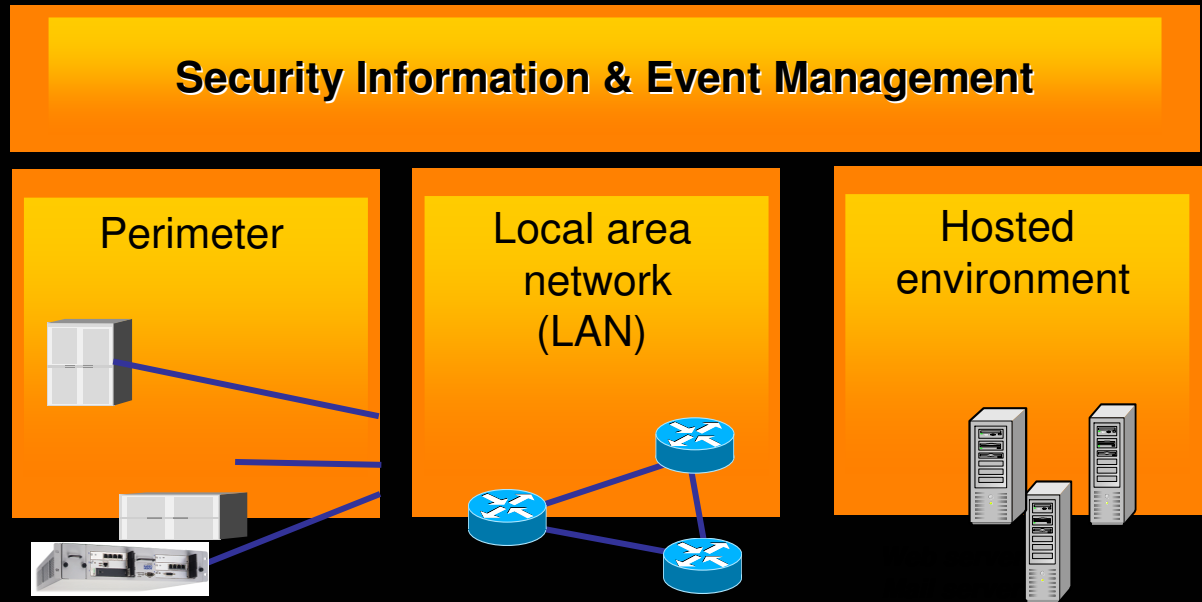
# Infrastructure Security Management

*Comprehensive threat and vulnerability management across networks, servers and end-points*

## Goals

- Protect the enterprises through detection and management of network threats at the network core and perimeter
- Prevent intrusions and protect all endpoints and host systems
- Centrally manage and monitor security operations.
- Investigate and respond to security events

## Security Information & Event Management



## IBM solutions















- Tivoli Security Information and Event Manager
- ISS Proventia Appliances

- Intrusion prevention
- Firewall
- Universal threat management

- Intrusion prevention
- Anomaly detection service
- Vulnerability management
- Remediation
- Compliance and risk management
- Vulnerability protection service

- Host protection (server and desktop)
- Layer 4 – 7 protection (content, URL, Web)

# Analyst Accolades

	Title	2006/7 Status
	ISS Network Security, Firewalls and Managed Services	Leader
	Identity Management ( TIM , TAM, FIM, TDI, TDS)	Leader
	Wave: User Account Provisioning ( TIM )	 Leader
	Wave: Enterprise Security Information Management (Consul inSight)	 Leader
	MQ: User Provisioning ( TIM )	 Leader
	MQ: Security Information & Event Management (TSOM, Consul InSight)	 Challenger
	MQ: Web Access Management ( TAM )	 Leader
	Managed Security Services (Marketshare)	Leader
	Marketshare: Identity and Access Management	Ranked #1



# Resource Center

## CCR2 Newsletter Article

- <http://www.ibm.com/software/tivoli/features/ccr2/ccr2-2007-09/innovative-mainframe.html>

## zSecure data sheets, solution sheets, and white papers

- <http://www-306.ibm.com/software/tivoli/products/zsecure/>

## zSecure Manuals

- <http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/index.jsp?topic=/com.ibm.zsecure.doc/welcome.htm>

## Redbooks & Redpapers

- <http://www.redbooks.ibm.com/>

## IBM Tivoli Security and System z Redpaper

- <http://www.redbooks.ibm.com/redpieces/abstracts/redp4355.html?Open>