Securing SharePoint 101

Rob Rachwald

Imperva

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Major SharePoint Deployment Types

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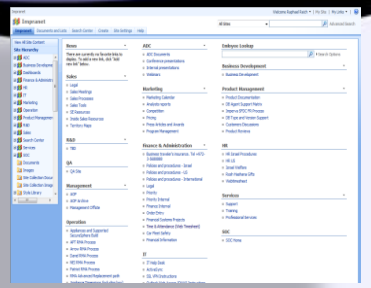
Internal Portal

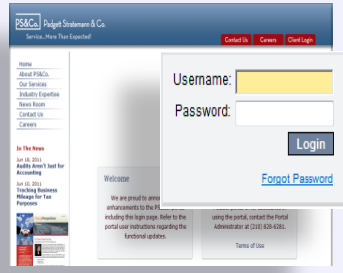
- Uses include SharePoint as a file repository
- Only accessible by internal users



Company Intranet

External Portal

- Uses include SharePoint as a file repository
- Accessible from the Internet
- For customers, partners or the public



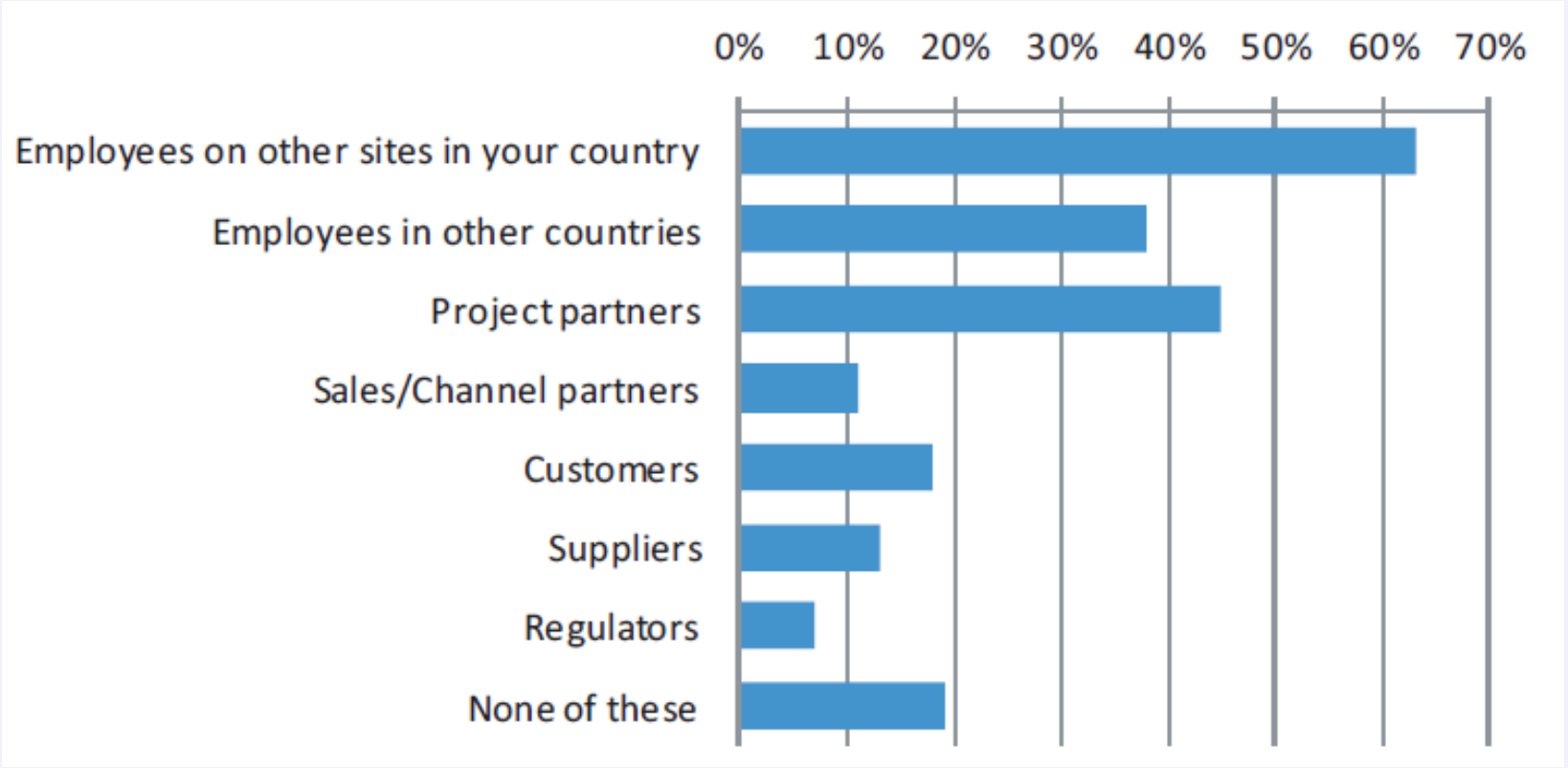
Client access

Internet Website

- SharePoint as the Web site infrastructure
- Not used as a file repository

Public website

Do you use SharePoint for collaboration with any of the following?



Source: ***SharePoint: Strategies and Experiences***, September 2011

The SharePoint Footprint

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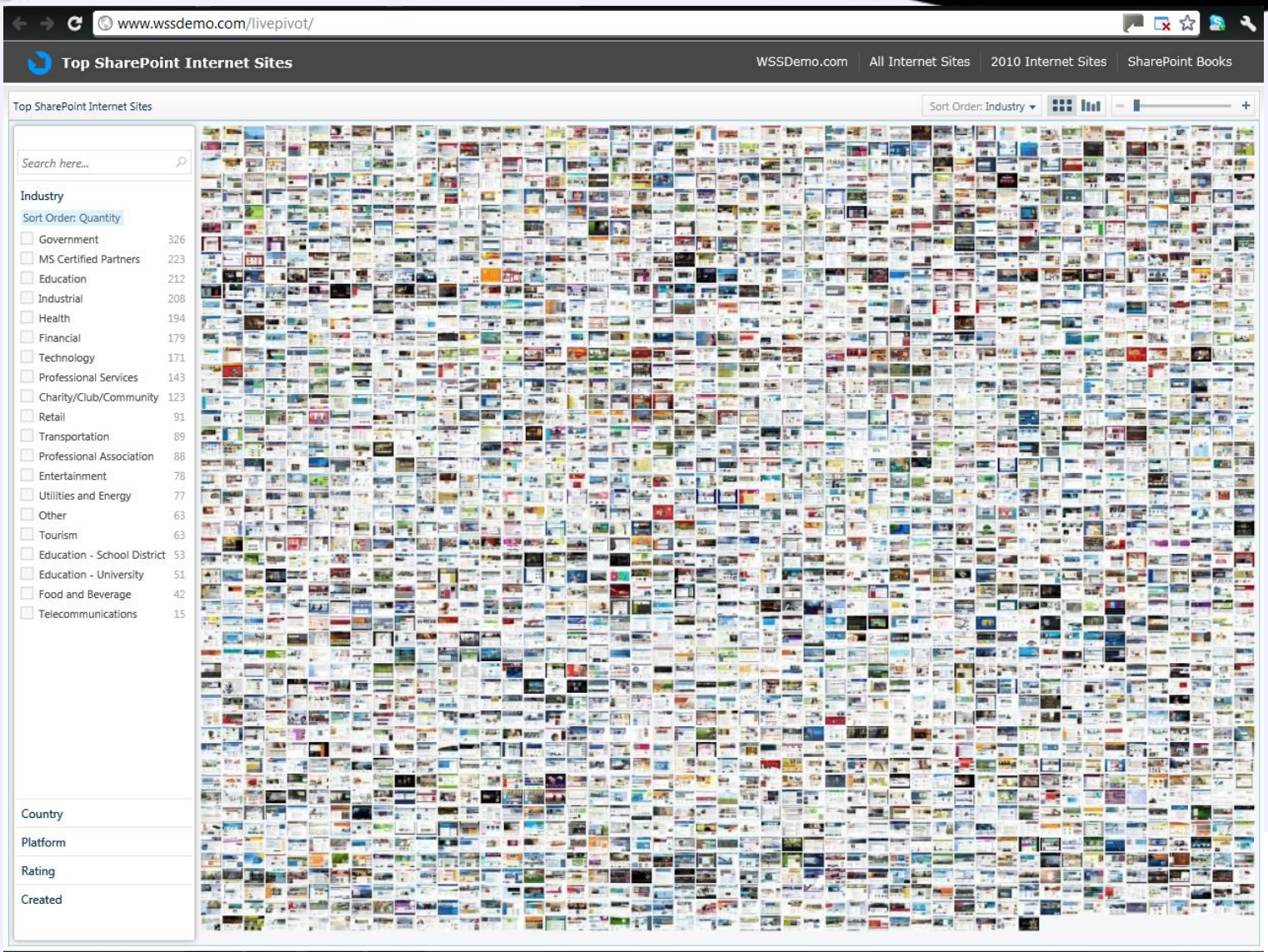

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SharePoint Sidesteps IT—and Security

"Much of SharePoint's appeal is that it enables users to bypass the explicit and organizational and process barriers of the organization."

—Gartner, 2009

Key Issues With SharePoint

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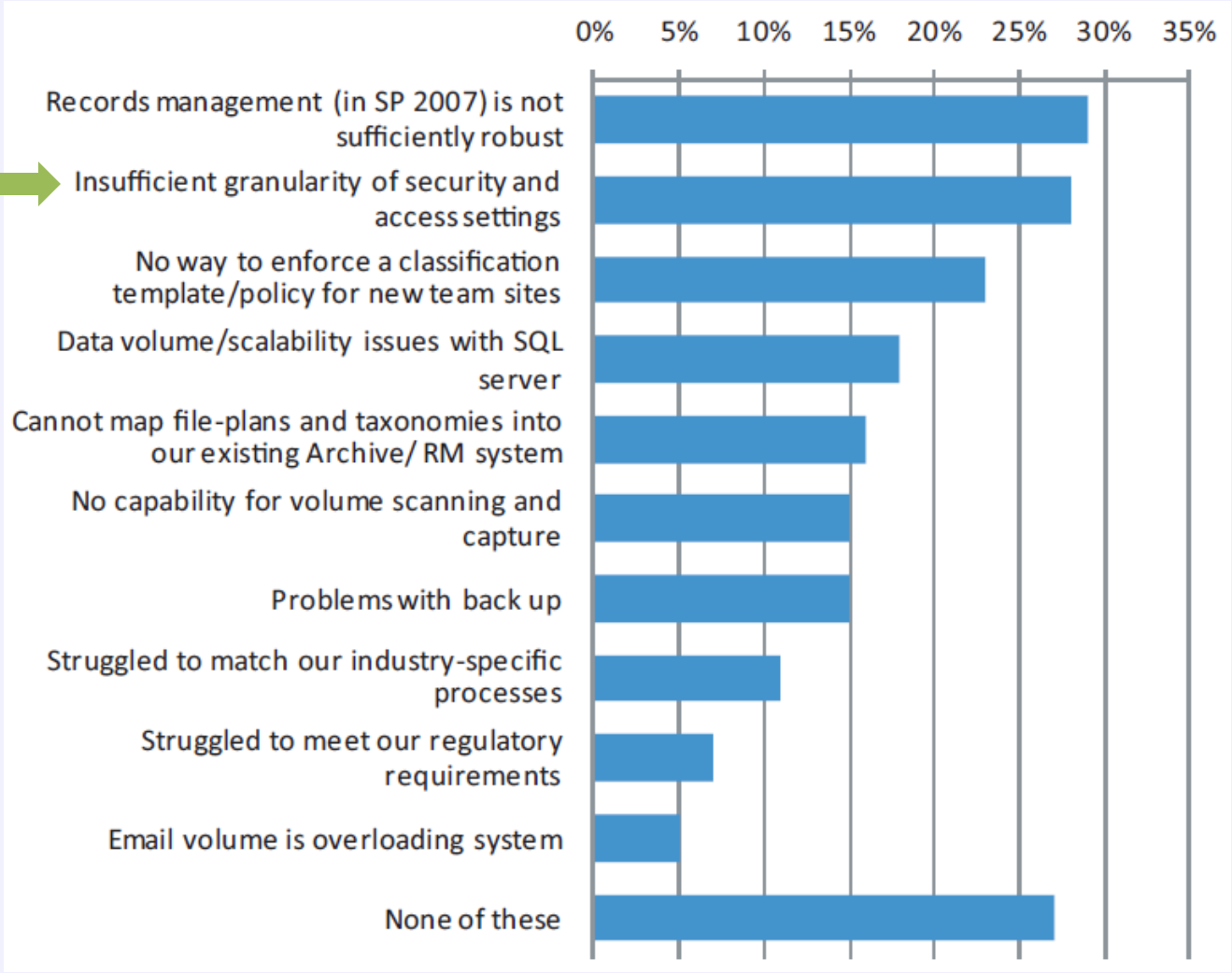
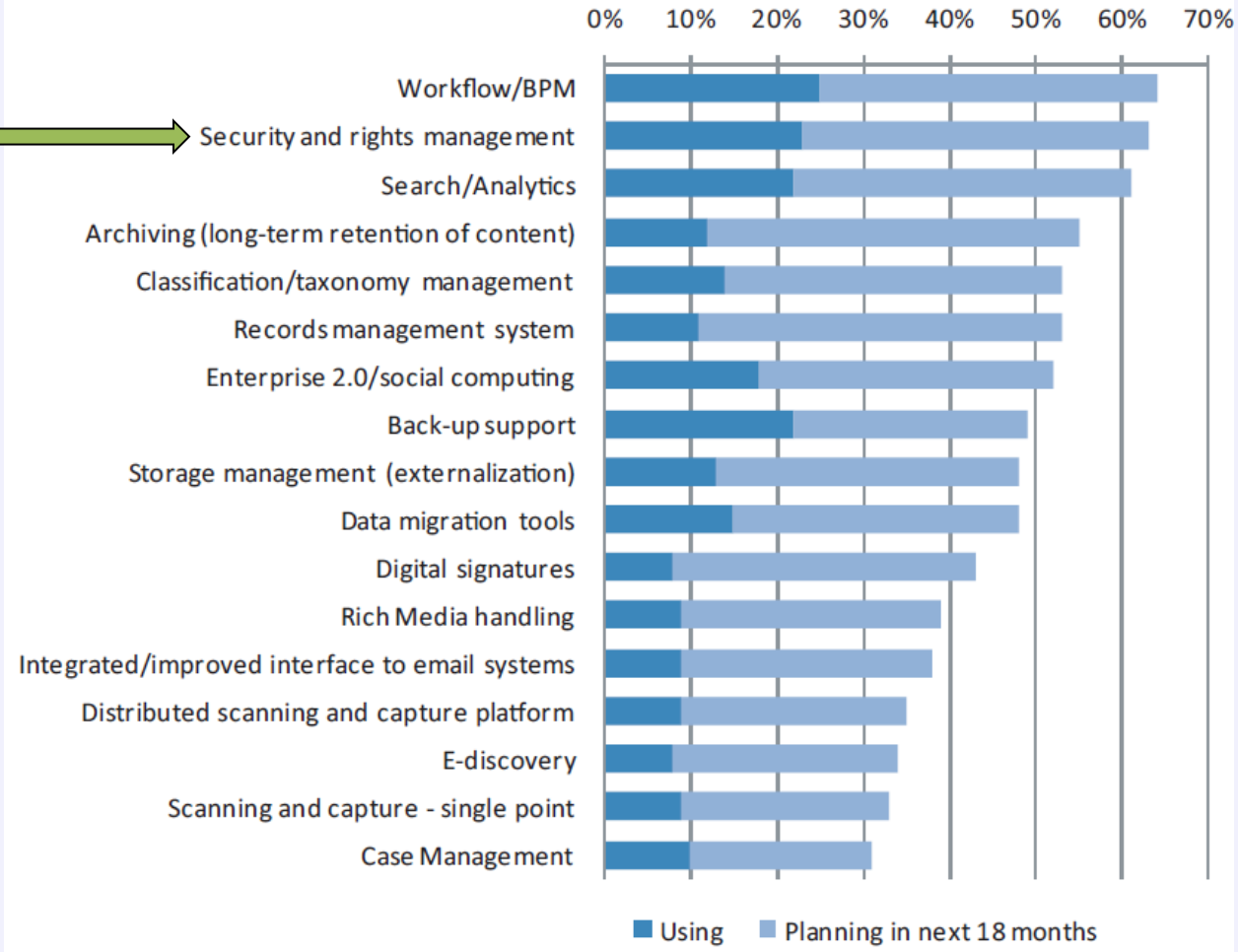


Source: ***SharePoint: Strategies and Experiences***, September 2011

Third-Party Additions



Source: ***SharePoint: Strategies and Experiences***, September 2011

SharePoint Admins Gone Wild

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The Register®

SharePoint gods peek into colleagues' info – poll

Security is for other people

By **Gavin Clarke** • **Get more from this author**

Posted in Software, 23rd January 2012 13:22 GMT

Free whitepaper – Reshaping IT

SharePoint admins are abusing their privileged status to sneak a peak at classified documents according to a poll that shows consistent abuse of security in Microsoft's business collaboration server.

A third of IT administrators or somebody they know with admin rights have read documents hosted in Microsoft's collaboration server that they are not meant to read.

Most popular documents eyeballed were those containing the details of their fellow employees, 34 per cent, followed by salary – 23 per cent – and 30 per cent said "other."

Have Your Shared Privileged Info via SharePoint?

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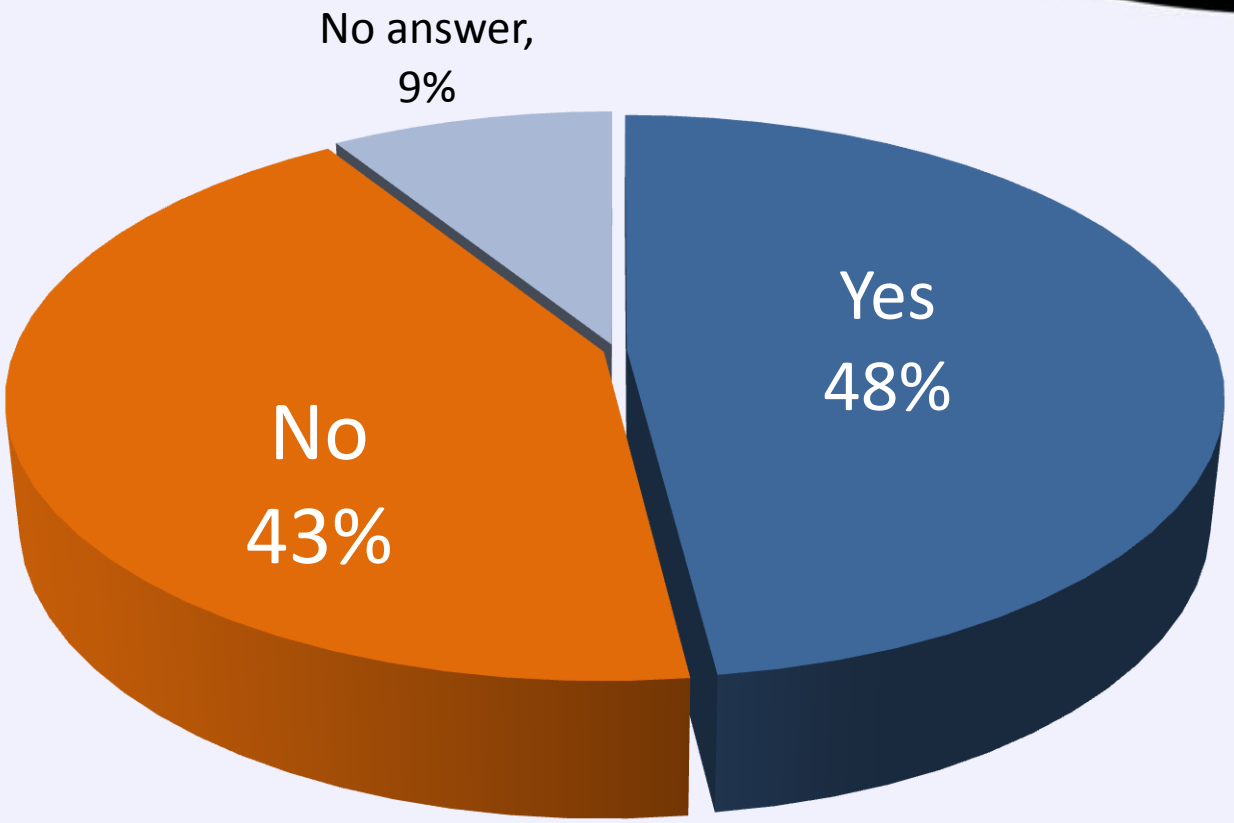

Source: NetworkWorld, May 2, 2011

Type of Content Shared

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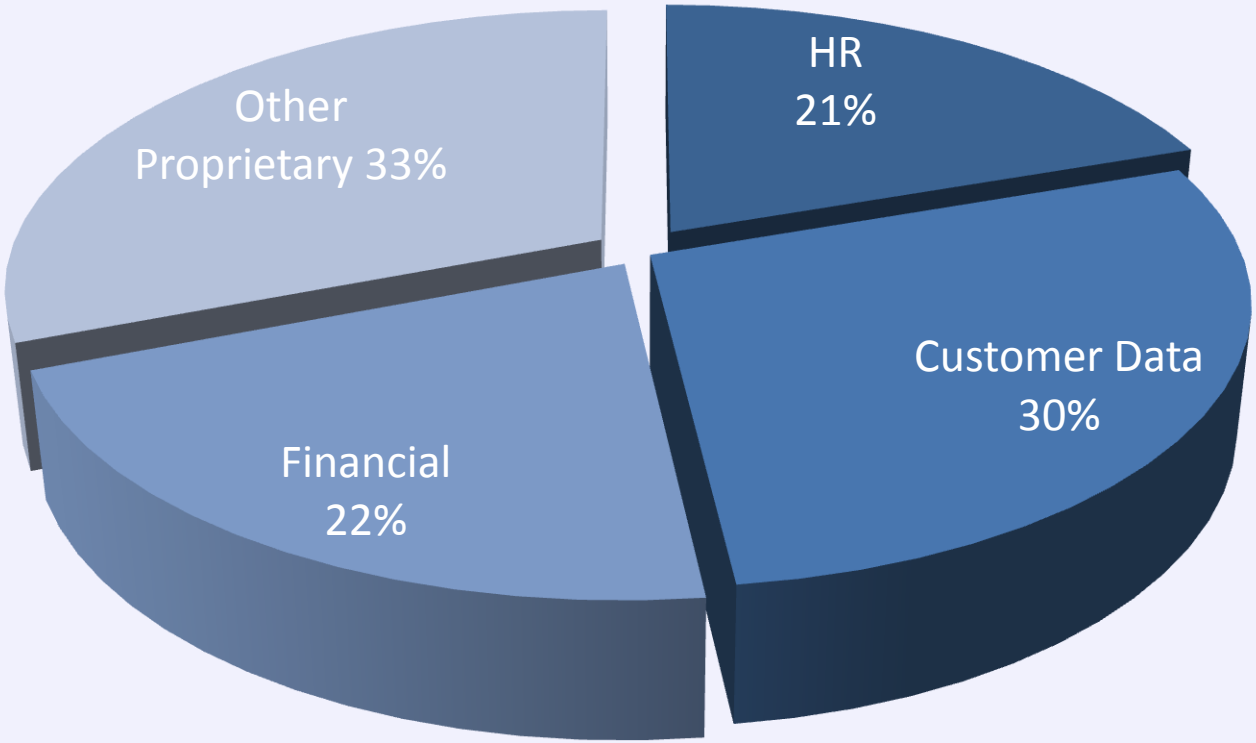

Source: NetworkWorld, May 2, 2011

Impact of SharePoint Insecurity

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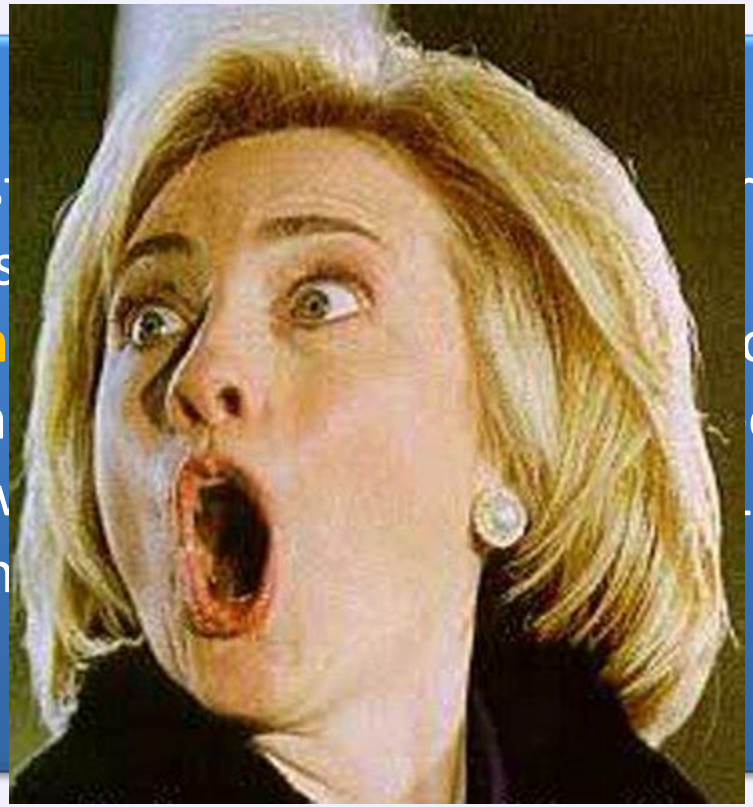
"[Inves ripts on
Manning's **Microsoft**
SharePoin ocuments.
He ran th cuments,
then dow eaks had
publish same."



Source: http://www.wired.com/threatlevel/2011/12/cables-scripts-manning/

SharePoint Security Capabilities: 2007 vs 2010

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2007

- Encryption
- Authentication
- Permissions

2010

- Encryption
- Authentication
- Permissions
- Some policy management
- Metadata tagging
- Versioning
- Workflow
- Info rights management

SharePoint 2010 is Still Missing

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- Functionality
  - Proper auditing
  - Web-based protection
  - Security-centric reporting
  - Security-centric policies
- Bottom line
  - SharePoint is built for collaboration first.
  - Features may provide security, but aren't inherent security tools
  - Did you know?
    - SSL is NOT turned on by default for downloading.
    - Remote binary large object (BLOB) storage does not coordinate underlying storage permissions with its own access control lists.

Native SharePoint Security Capabilities

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"In general, SharePoint involves a complex set of interactions that makes it difficult for security teams to know if all their concerns are covered."

—Burton Group, 2010

Key SharePoint Security Issues

#1: Getting Permissions Right

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- Summary:
  - Microsoft's advice begins with permissions
  - "Content should not be available to all users… information should be accessible on a need-to-know basis"
- Why challenging?
  - Difficult to track and maintain
  - Constantly change
  - No automation or aggregation
- What is Required?
  - Automated permissions review tools
  - Baseline and change reports
  - Simplify rights reviews
- Example: If a hospital uses SharePoint for patient data and the system is managed by hospital staff, then who keeps track of which doctors, nurses, or administrators can see patient data? Further, who maintains and updates these permissions over time? How are they able to do what they do? How do you identify excessive or dormant rights?

SharePoint Access Controls

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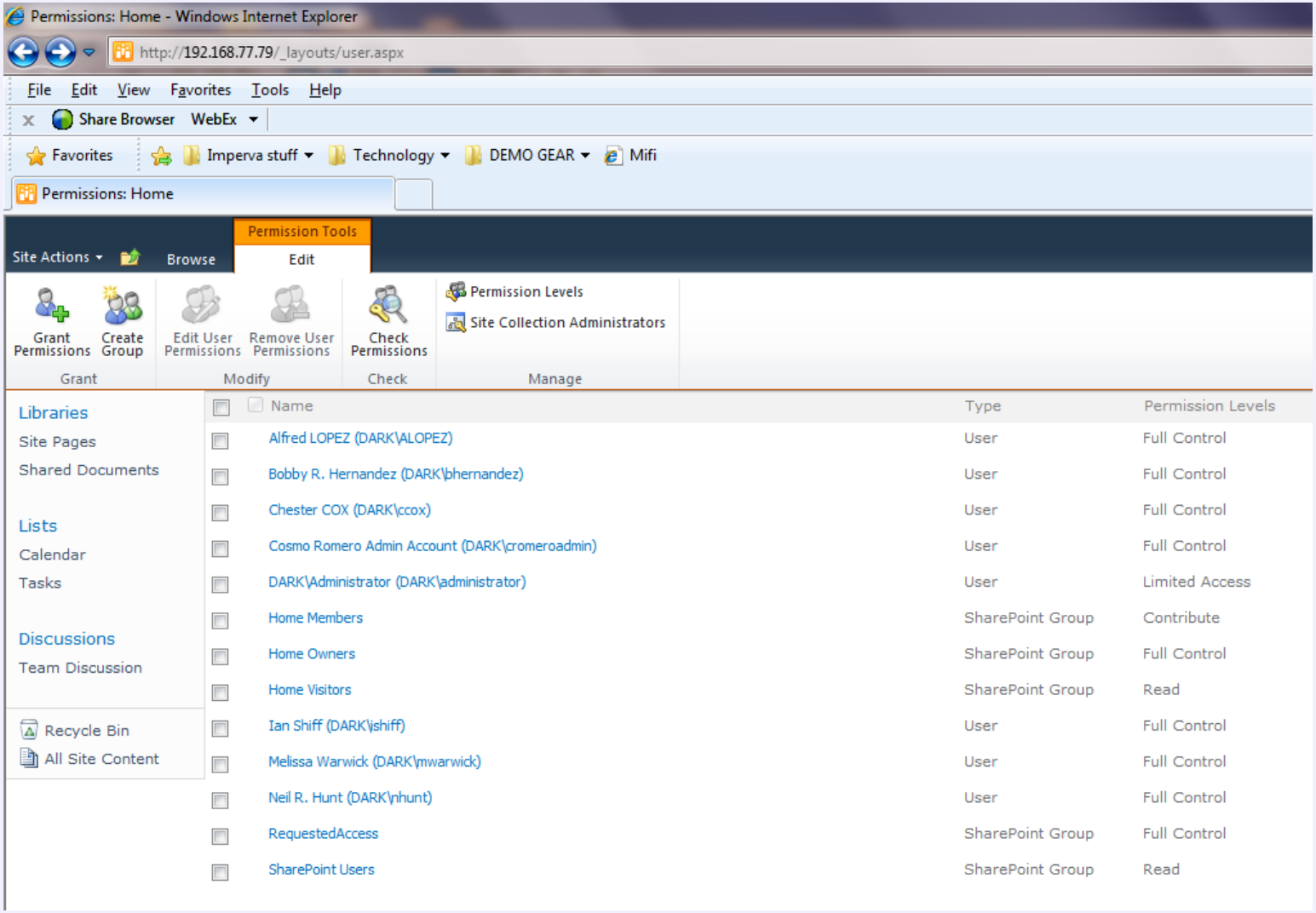

Basic Elements: User Rights Management

- Aggregate user rights across systems
- Identify data owners
- Detect excessive rights, reduce access to business-need-to-know
- Formalize and automate approval cycle

Finding Excessive Permissions

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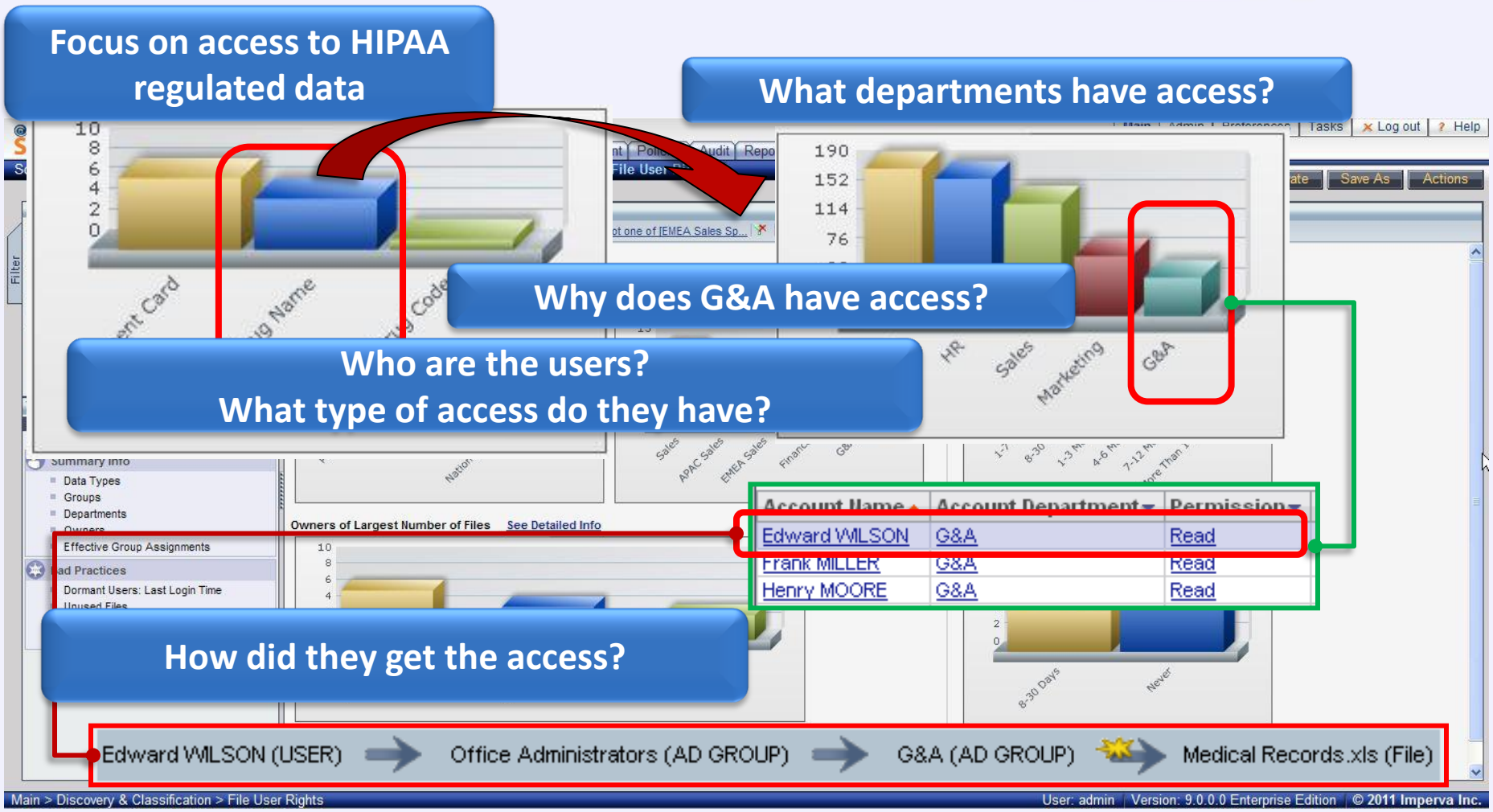

Automatic Identification of Excessive Rights

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Bad Practices

81 Dormant Users

381 Unused files

1 Files Accessible by Global Groups (everyone)

4 Permissions Directly Assigned to Users Who Are Not Owners

Should "Everyone" have access to sensitive data?
- "Everyone" group literally means all users

Are there any direct user permissions?

Account Name	Account Department	Permission	Type	Full Path	File Owner	Data Types	Last activity (from audit)
Albert HARRIS	HR	Read	Library	Finance/Budgets	Chester COX	Financial Data	09/02/2011 12:00:00 AM
Arthur JACKSON	HR	Read	Library	Finance/Budgets	Chester COX	Financial Data	
Daniel REED	Finance	Read	Library	Finance/Budgets	Chester COX	Financial Data	09/02/2011 12:00:00 AM
Edward WILSON	G&A	Read	Library	Finance/Budgets	Chester COX	Financial Data	
Eugene EVANS	Finance	Read	Library	Finance/Budgets	Chester COX	Financial Data	
Floyd EDWARDS	Finance	Read	Library	Finance/Budgets	Chester COX	Financial Data	
Harold WHITE	HR	Read	Library	Finance/Budgets	Chester COX	Financial Data	09/02/2011 12:00:00 AM

What rights are not used?
- Users with access they appear not to need

Identifying Dormant Users

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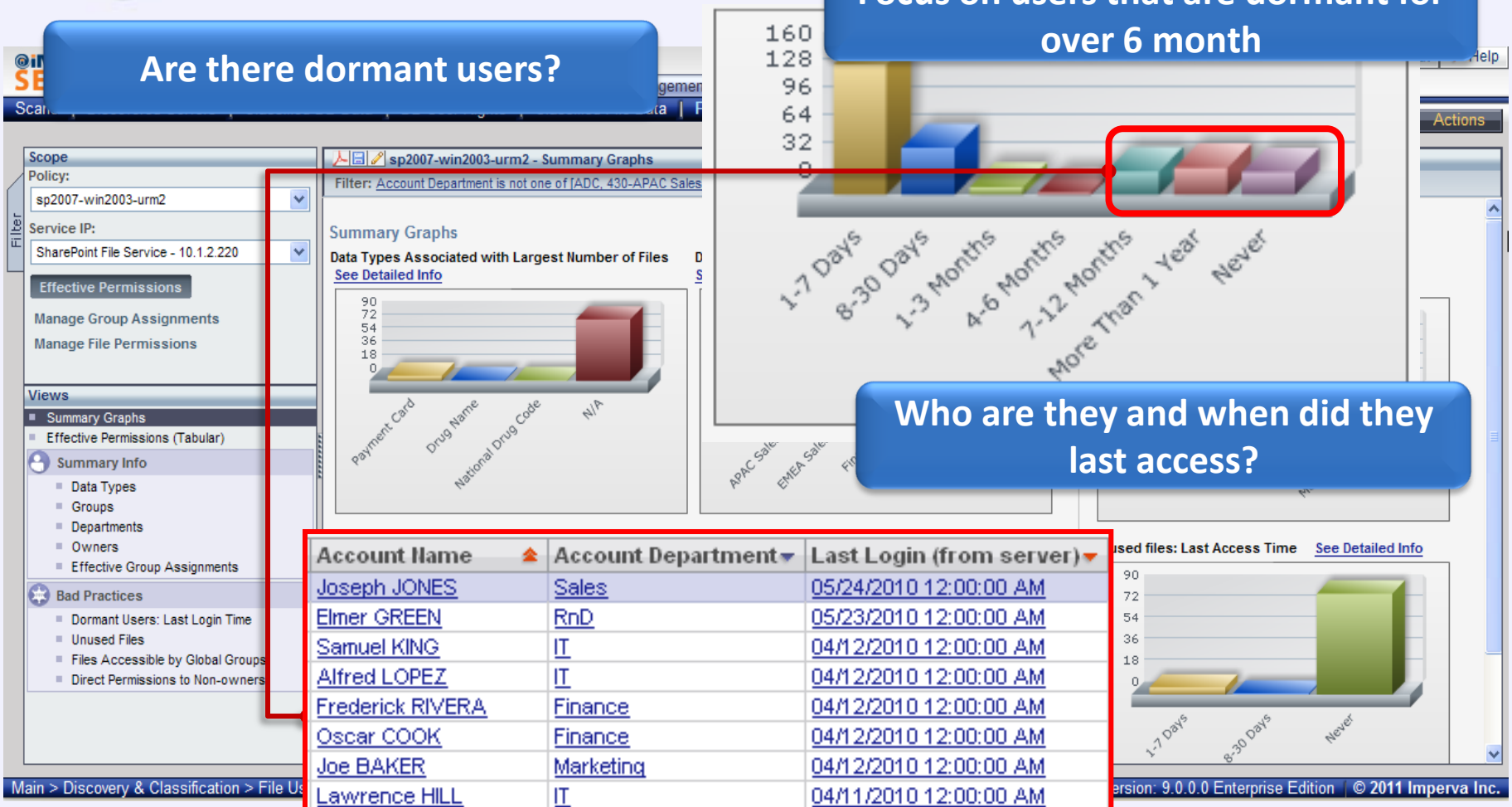
Are there dormant users?

Focus on users that are dormant for over 6 month



Who are they and when did they last access?

Account Name	Account Department	Last Login (from server)
Joseph JONES	Sales	05/24/2010 12:00:00 AM
Elmer GREEN	RnD	05/23/2010 12:00:00 AM
Samuel KING	IT	04/12/2010 12:00:00 AM
Alfred LOPEZ	IT	04/12/2010 12:00:00 AM
Frederick RIVERA	Finance	04/12/2010 12:00:00 AM
Oscar COOK	Finance	04/12/2010 12:00:00 AM
Joe BAKER	Marketing	04/12/2010 12:00:00 AM
Lawrence HILL	IT	04/11/2010 12:00:00 AM
Raymond CLARK	Finance	04/11/2010 12:00:00 AM
Harold WHITE	HR	04/11/2010 12:00:00 AM
Richard LEE	IT	04/11/2010 12:00:00 AM

Reviewing User Rights with Data Owners

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Create permission reports for data owners

Grantee Type	Grantee Name	Permission	Full Path	File Owner	Data Types
User	Administrator	Change Permissions	Finance	Chester COX	Financial Data
User	Administrator	Create	Finance	Chester COX	Financial Data
User	Administrator	Delete	Finance	Chester COX	Financial Data
User	Administrator	Read	Finance	Chester COX	Financial Data

Select Columns | Page 1 of 1 | Showing records 1-20 out of 20 available | Approve | Reject | Review | Users

Allow data owners to manage their permissions

Create a baseline: review only changed permissions

Log decisions for future audit

Status	Grantee Type	Grantee Name	Permission	Full Path	File Owner	Data Types	Status Change Date
Approved	User	Administrator	Change Permissions	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:40 AM
In Review	User	A		ets	Chester COX	Financial Data	09/09/2011 11:14:21 AM
Approved	User	A		ets	Chester COX	Financial Data	09/09/2011 11:14:40 AM
Approved	User	A		ets	Chester COX	Financial Data	09/09/2011 11:14:40 AM
In Review	User	A		ets	Chester COX	Financial Data	09/09/2011 11:14:21 AM
Unmanaged	AD Group	Finance	Create	Finance/Budgets	Chester COX	Financial Data	
Unmanaged	AD Group	Finance	Delete	Finance/Budgets	Chester COX	Financial Data	
Unmanaged	AD Group	Finance	Read	Finance/Budgets	Chester COX	Financial Data	
Unmanaged	AD G			ets	Chester COX	Financial Data	
Reject	AD			ets	Chester COX	Financial Data	09/09/2011 11:13:57 AM
Approved	SP G			ets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP G			ets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Members	Read	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Members	Write	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Owners	Change Permissions	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Owners	Create	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Owners	Delete	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Owners	Read	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Owners	Write	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM
Approved	SP Group	Home/Home Visitors	Read	Finance/Budgets	Chester COX	Financial Data	09/09/2011 11:14:10 AM

#2: Automate Compliance Reporting

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- Summary:
  - SharePoint makes collaboration and document storage easy
  - If you store business data, you must be able to demonstrate compliance with regulations and mandates
- Why challenging?
  - Manual process – minimal inherent data audit capability
  - Native audit trail is not usable/readable
- What is Required?
  - Automated, human-readable activity auditing and reporting
  - Blended with enrichment data to simplify compliance process
- Example: In August 2011, Bloomberg reported on 300,000 healthcare records that appeared in an Excel file. No one knows where the file came from, indicating a lack of auditing.

Site Id	Item Id	Item Type	User Id	Document Location	Occurred (GMT)	Event	Event Data
{98625596-3b2b-4005-83(	{71f424dd-6697-4d3a-8-	Folder	IL\moshe <IL\Moshe>	tsvikalib/testDocSet	2011-06-22T13:20:01	Update	<Version><Major>1</Major><Minor>0</Minor></Version>
{98625596-3b2b-4005-83(	{71f424dd-6697-4d3a-8-	Site	IL\moshe <IL\Moshe>	tsvikalib/testDocSet	2011-06-22T13:20:50	Security Role Bind Break Inhe	<url>tsvikalib/testDocSet</url><scope>518B480E-3D18-464B-B376-422D62E7DE67</scope>
{98625596-3b2b-4005-83(	{71f424dd-6697-4d3a-8-	Site	IL\moshe <IL\Moshe>	tsvikalib/testDocSet	2011-06-22T13:21:09	Security Role Bind Update	<roleid>1073741829</roleid><principalid>16</principalid><scope>518B480E-3D18-464B-B376-422D62E7DE67</scope><operation>ensure added</operation>

Basic Elements: Access Auditing and Alerting

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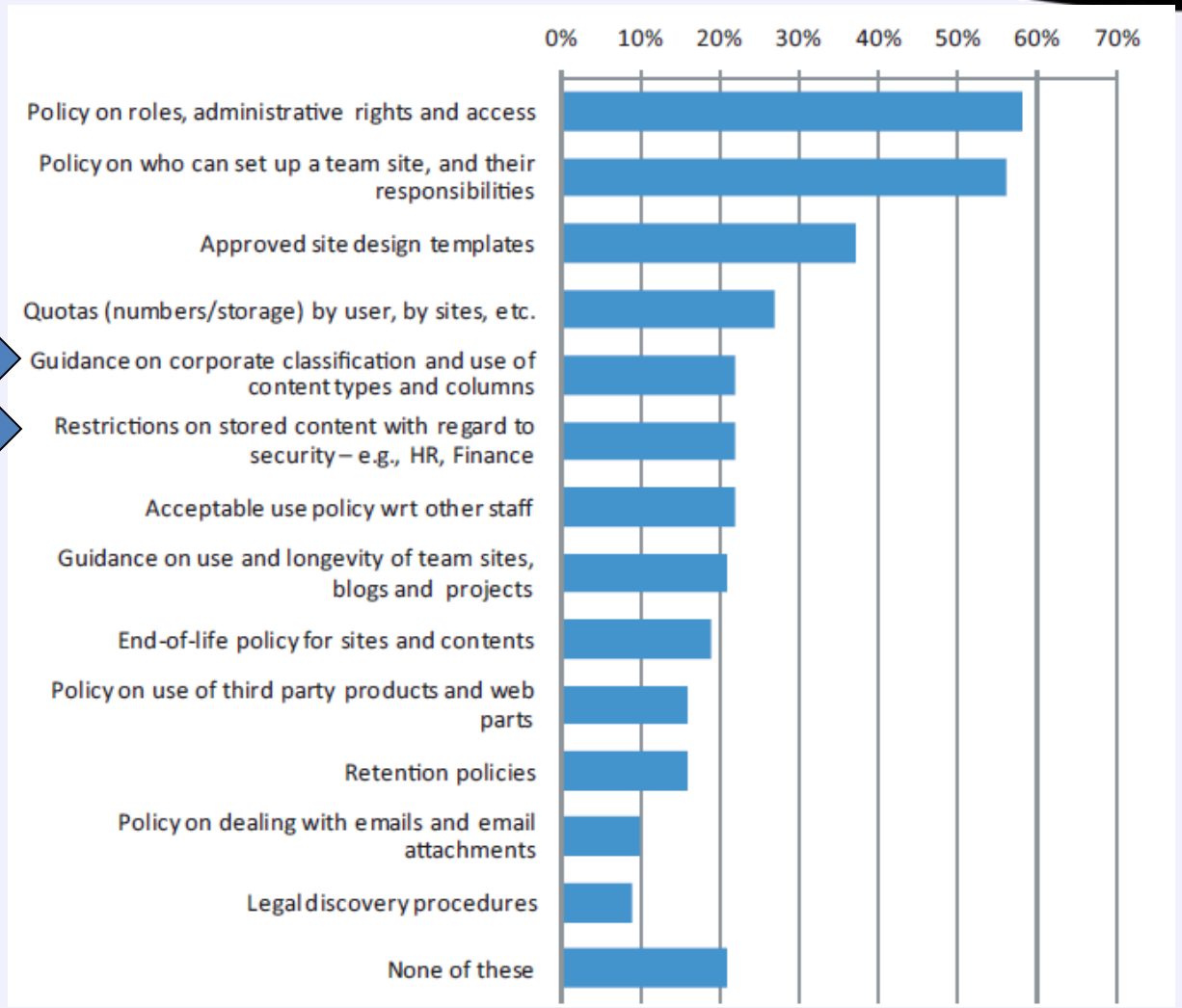
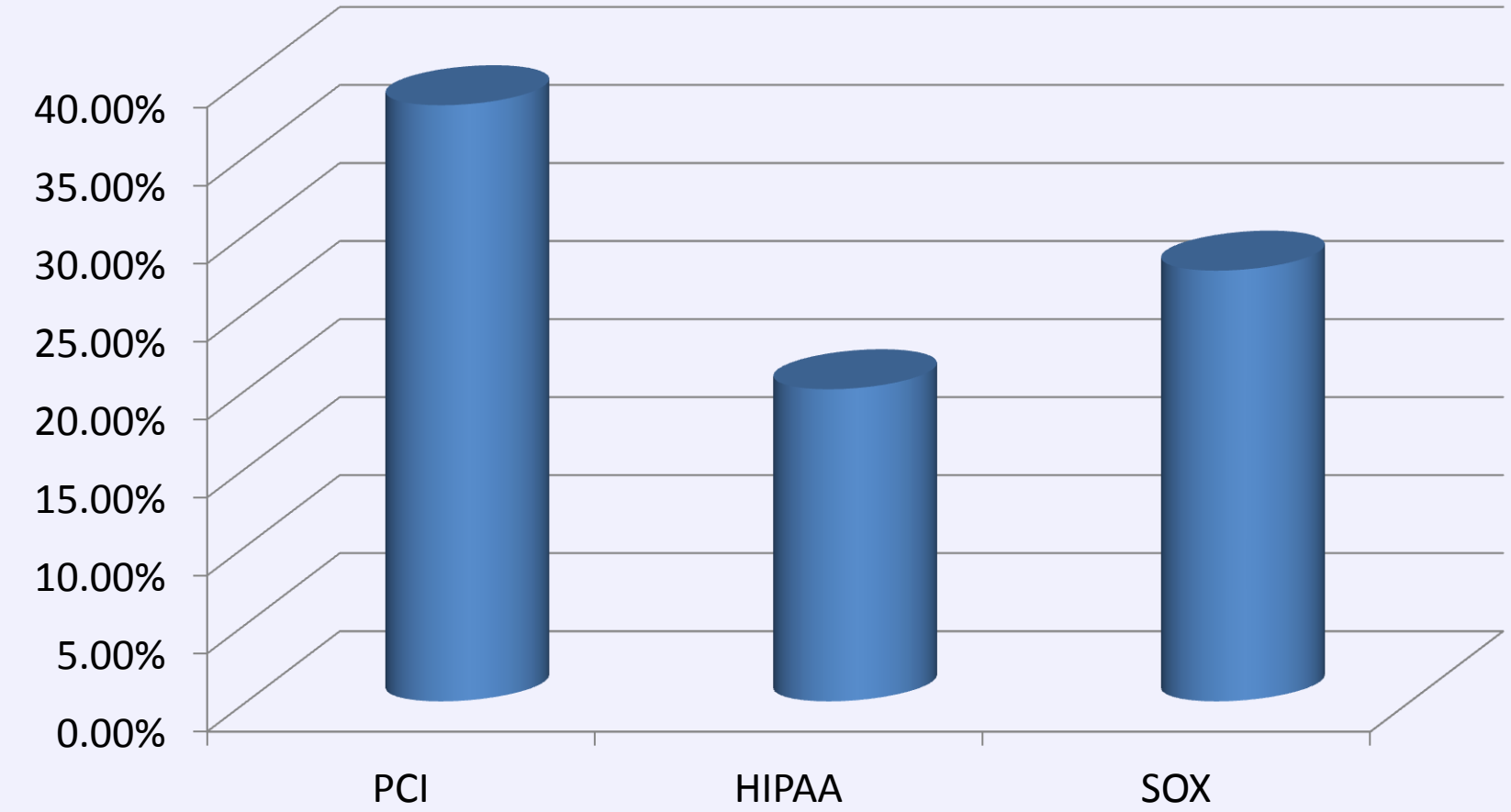
- Full audit trail
  - Audit all access activity
  - No performance impact
- Analytics and reporting
  - Automatic reports to data owners
  - Forensics for incidents
  - Compliance reporting

Governance Policies in Place



Source: ***SharePoint: Strategies and Experiences***, September 2011

Regulations and SharePoint



Source: NetworkWorld, May 2, 2011

Regulations and SharePoint

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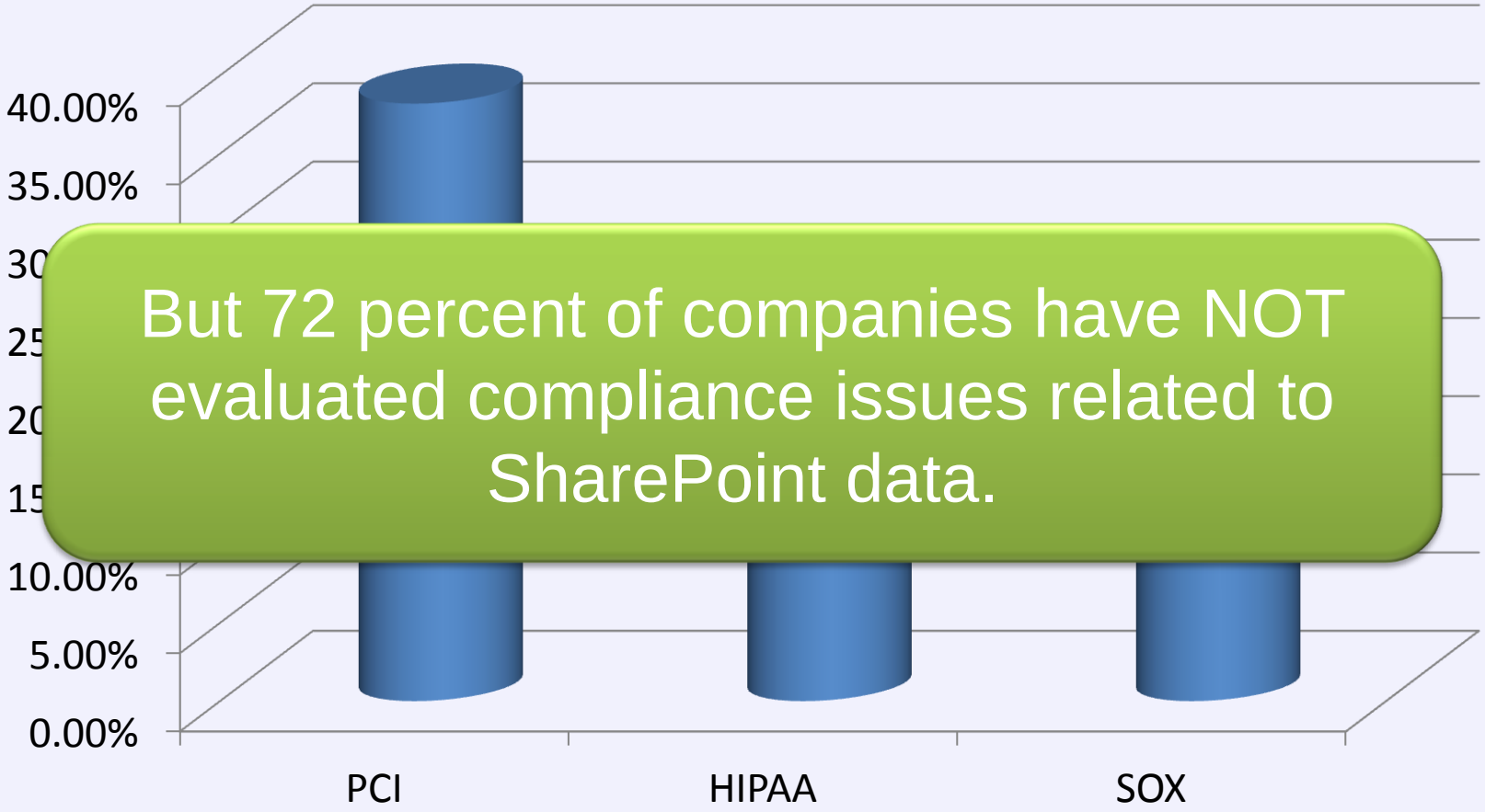

But 72 percent of companies have NOT evaluated compliance issues related to SharePoint data.

Source: NetworkWorld, May 2, 2011

Full Audit Trail

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Broad visibility: All folders, lists and files

Minimal impact

- Doesn't degrade performance

Detailed Analytics for Forensics

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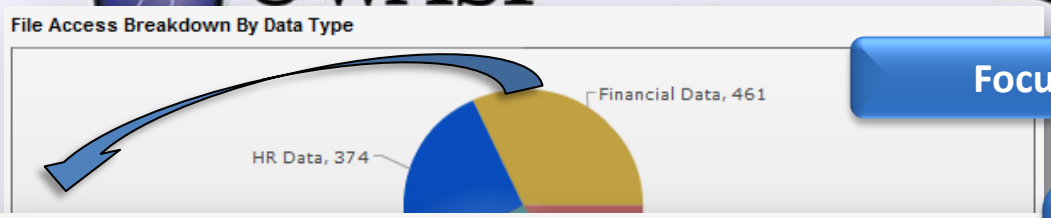
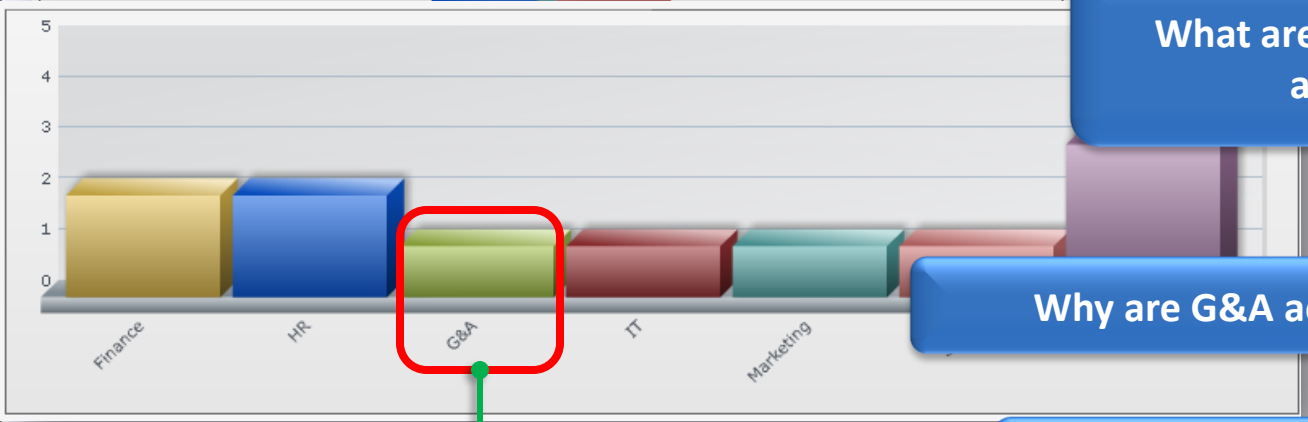


Focus on access to financial data



What are the primary departments accessing this data?

Why are G&A accessing financial data?

Who accessed this data?
When & what did they access?

Event Date and Time	User Name	User Department	Operation	Full Path	Data Type	Data Owner
September 9, 2011 8:21:59 AM	EWILSON	G&A	Read	Finance/Budgets	Financial Data	Chester COX
September 9, 2011 8:21:59 AM	EWILSON	G&A	Read	Finance/Budgets/Budget Prep FY10.pptx	Financial Data,National ID	Chester COX
September 9, 2011 8:21:59 AM	EWILSON	G&A	Read	Finance/Budgets/Forms	Financial Data	Chester COX
September 9, 2011 8:20:57 AM	EWILSON	G&A	Read	Finance/Budgets/Forms	Financial Data	Chester COX

Who owns this data?

#3: Respond to Suspicious Activity

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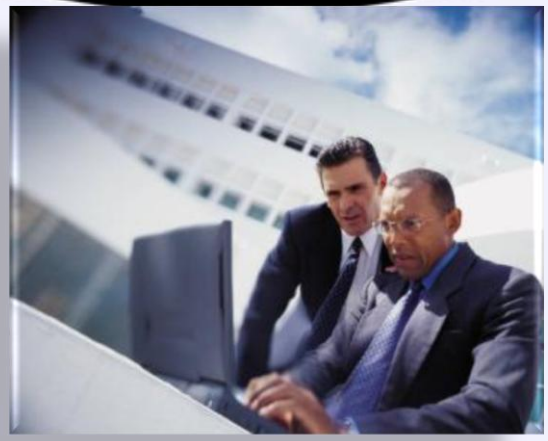
- Summary:
  - SharePoint is used as a place to share information
  - A broad range of internal and external groups are given access
  - Organizations need to balance trust and openness with the ability to detect and alert on suspicious activity
- Why challenging?
  - No automated analysis of access activity
  - Rights management (RMS) is complex to configure and maintain
- What is Required?
  - Policy framework layered on top of the audit record can identify suspicious behavior
  - Pre-configured policies simplify monitoring and response processes
- Example: In the Wikileaks scenario, Manning used an automated process to crawl the SharePoint system and to siphon out available files. A simple occurrences policy would have alerted if a certain number of files were touched in a small timeframe.

Basic Elements: Alerting

- Access control
  - Alert/Block access that violates corporate policies



Real-time Enforcement: Possible Data Leakage

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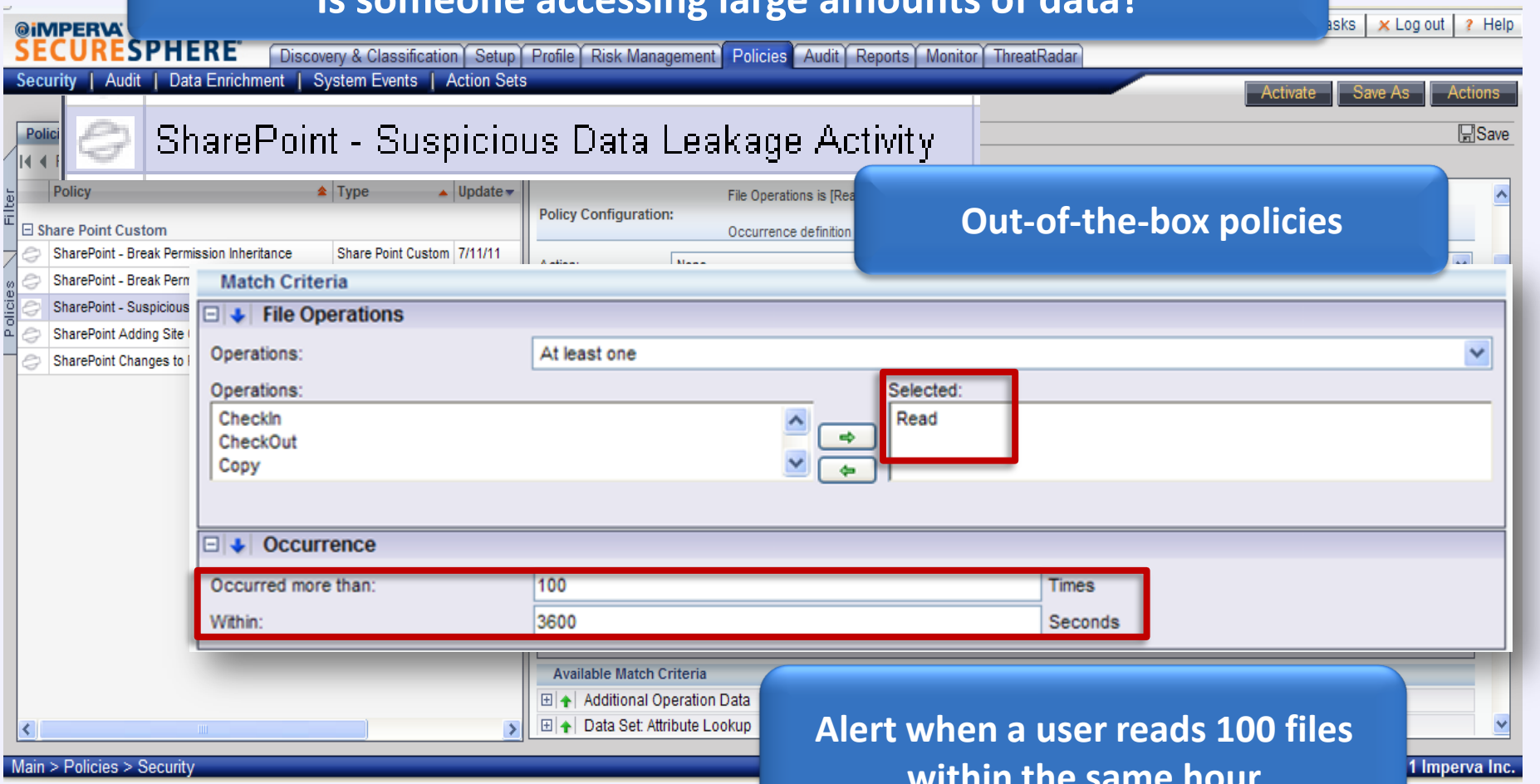
Is someone accessing large amounts of data?



Out-of-the-box policies

Alert when a user reads 100 files within the same hour

Real-time Enforcement: Possible Data Leakage

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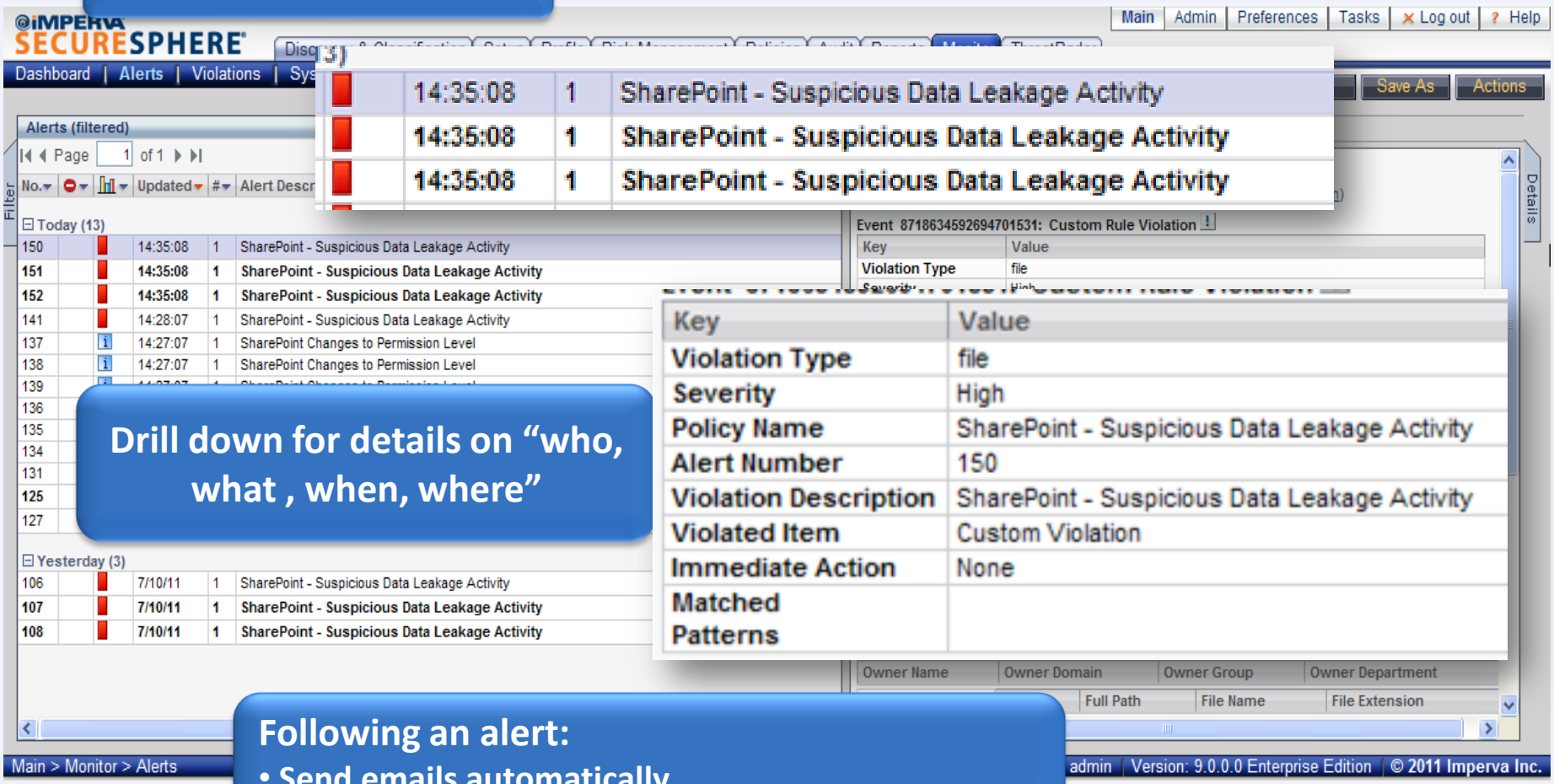
See triggered alerts



Drill down for details on "who, what , when, where"

Following an alert:

- **Send emails automatically**
- **Create security events in SIEM tools**

Data Owner Identification

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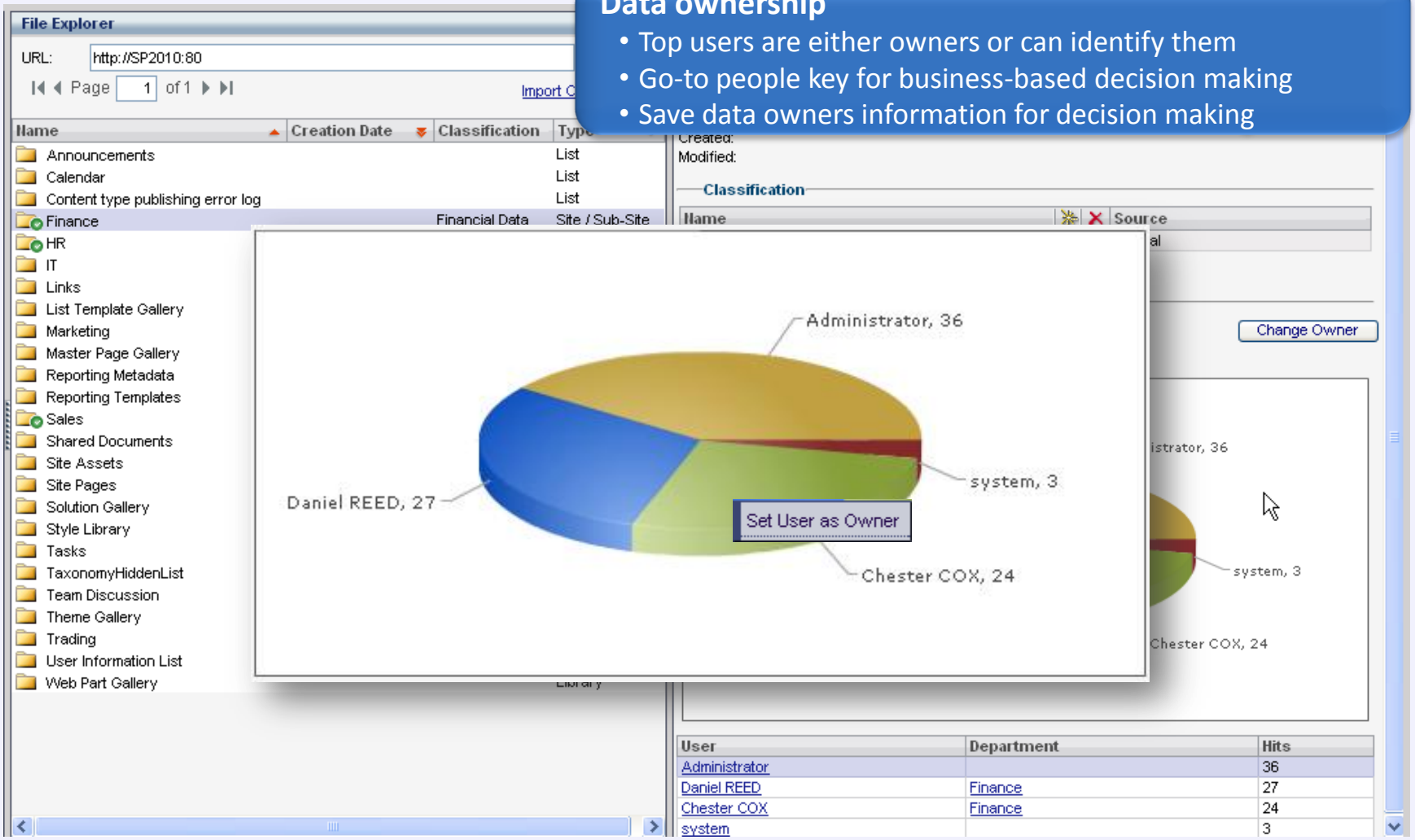
Data ownership

- Top users are either owners or can identify them
- Go-to people key for business-based decision making
- Save data owners information for decision making



#4: Protect Web Applications

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- Summary:
  - Web applications and portals are a common threat vector for hacker attacks
  - 30% of organizations have external-facing SharePoint sites
- Why challenging?
  - Time consuming process to discover, patch, and test vulnerabilities
- What is Required?
  - Real-time hack protection
  - Allows flexibility in resolution timelines
  - Includes out of the box policies to protect SharePoint

- Example: According to CVE details, XSS is the most commonly reported vulnerability in SharePoint.

What Do Hackers Think?

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Another thing, I have a registered account on there Sharepoint - if anyone knows any 2010 Sharepoint exploits/vulns please PM me them.

Example: April 2010, Microsoft reveals a SharePoint issue

The vulnerability could allow escalation of privilege (EoP) within the SharePoint site. If an attacker successfully exploits the vulnerability, the person could run commands against the SharePoint server with the privileges of the compromised user.

Source: http://www.eweek.com/c/a/Security/Microsoft-Confirms-SharePoint-Security-Vulnerability-187410/

Basic Elements: Threat Web Protection

- Web Application Firewall
  - Attack protection
  - Reputation controls
- Database protection
  - Fully audit SQL Server local activities
  - Block unapproved database changes
- SharePoint Web Policies
  - Out-of-the-box security and compliance
  - Always up-to-date

Attack Protection

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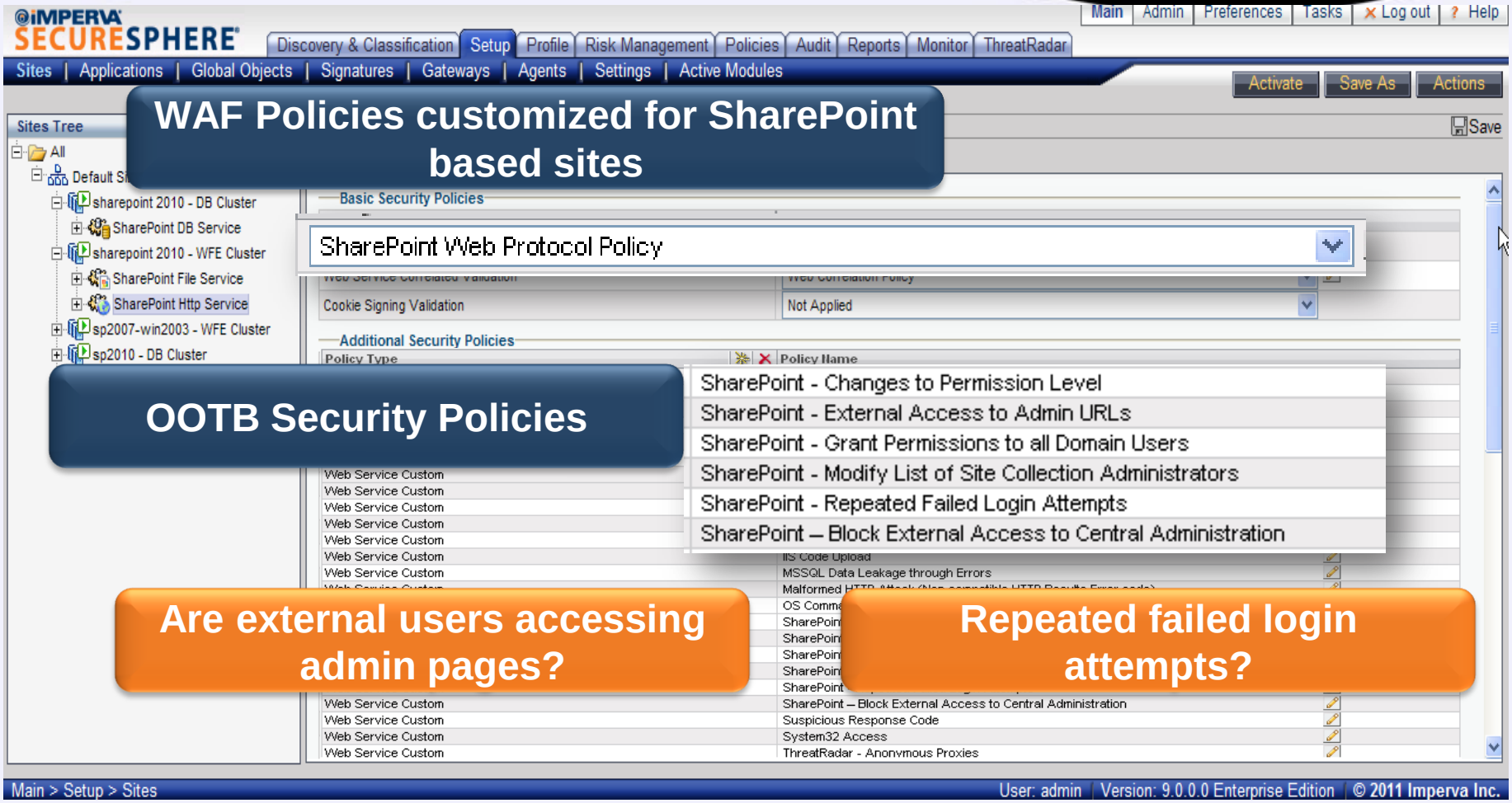

Google Diggity Project

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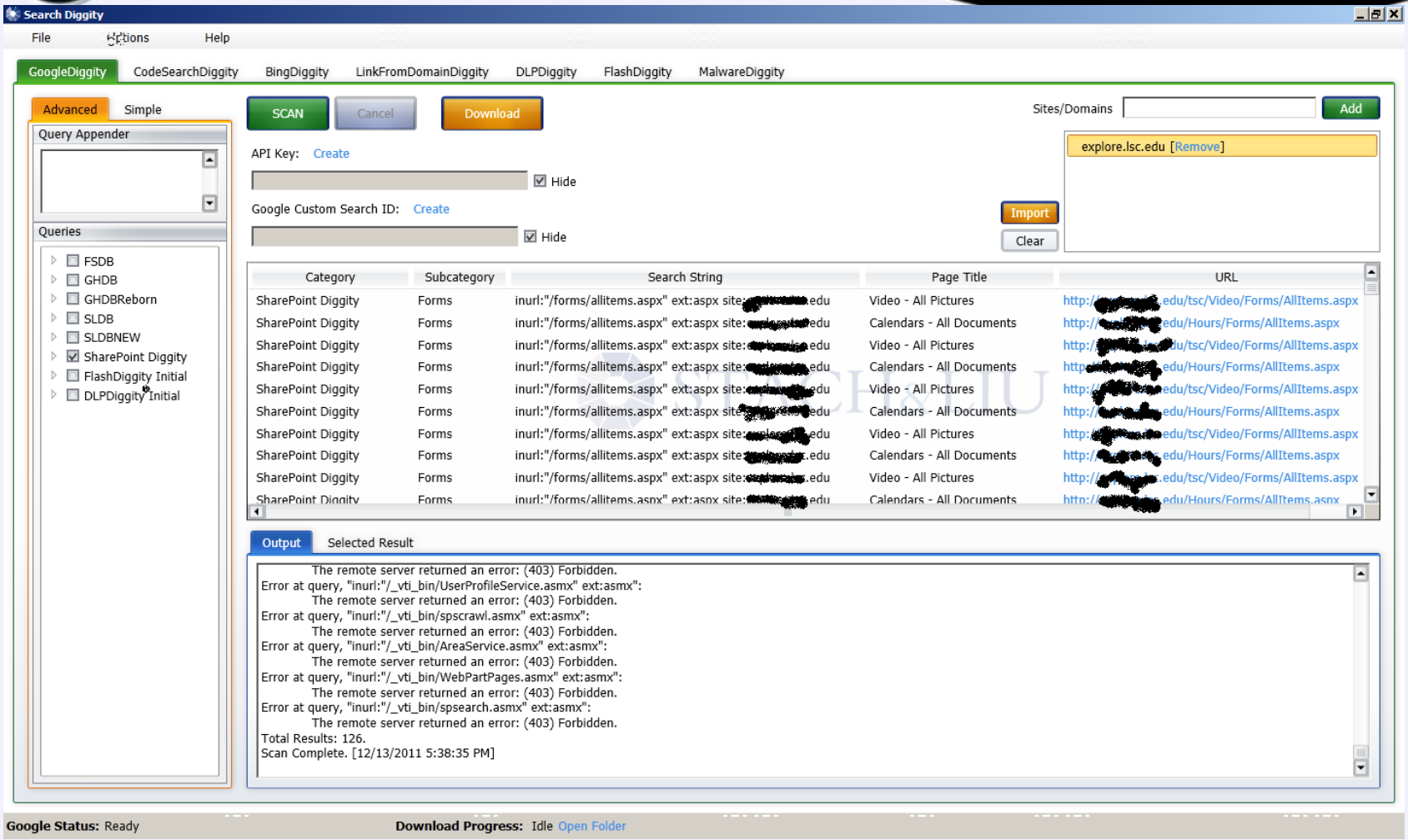

#5: Take Control When Migrating Data

- Summary:
  - SharePoint 2010 deployments are up 5X
  - Companies are using SharePoint as a replacement for other data repositories
  - Migration projects are a good time to remediate permissions chaos
- Why challenging?
  - AD users and groups fall out of sync with business requirements
  - Unused (stale) data accumulates over time
  - Manual approaches are overly time consuming
- What is Required?
  - Visibility and rights review tools reduce cost and streamline migrations

A Checklist to Securing SharePoint

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Get ahead of all SharePoint deployments

- Implement a SharePoint governance policy.
- Put in place security requirements when SharePoint instances go live.
- Don’t trust native security features.
- Specify what kind of information can be put in SharePoint.

Identify sensitive data and protect it

- Use search capabilities to identify sensitive data.
- Sensitive data in databases: use database activity monitoring to identify and protect confidential data.
- Sensitive data transacted by SharePoint Web applications
- Secure sensitive data held in files: use file activity monitoring to apply user rights management and auditing capabilities.

A Checklist to Securing SharePoint

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Deploy user rights management to identify data ownership

- Ensure legitimate access to data.
- Accelerate permissions reviews and management.
- Identify and delete dormant users. Check for dormant users on a regular basis.
- Focus on regulated data and streamline access.
- Adjust department-level access.
- Create permission reports for data owners.
- Implement ownership policies – especially for alerts around unauthorized access.

Protect Web sites

- Identify sensitive data transacted by SharePoint Web applications and use Web application firewalls to monitor and protect intranets, portals, and Web sites.
- Log all failed login attempts.

A Checklist to Securing SharePoint

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Enable auditing for compliance and forensics

- Who accessed this data?
- When and what did they access?
- Who owns this data?
- Are external users accessing admin pages?
- Have there been repeat failed login attempts?

OWASP

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SecureSphere for SharePoint

Imperva Data Security in 60 Seconds

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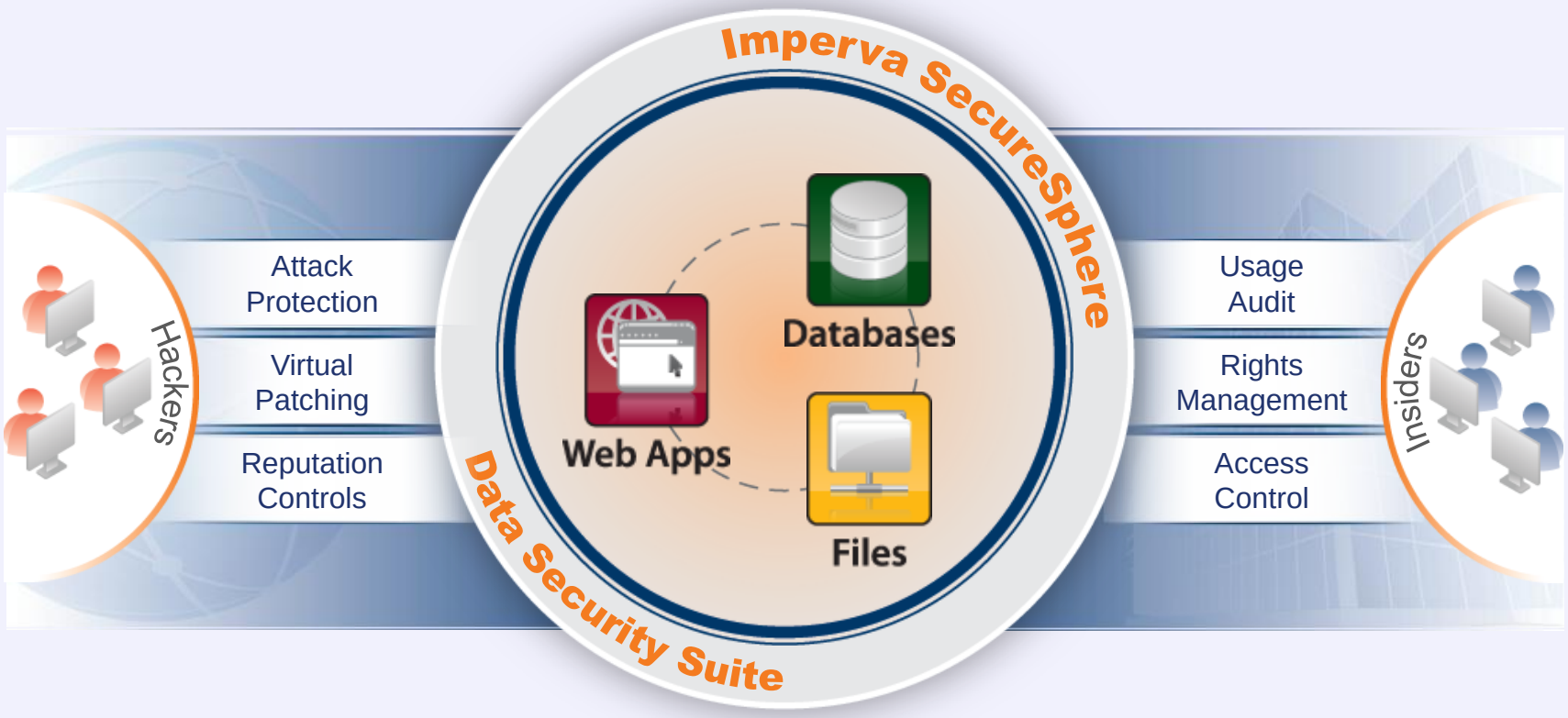

SharePoint & SecureSphere for SharePoint

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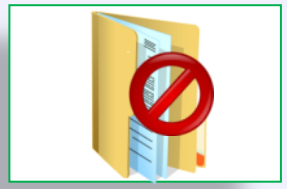
SecureSphere for SharePoint

- User rights management
  - Aggregate and visualize rights
  - Identify excessive and dormant rights
  - Streamline rights reviews
  - Identify data owners

- Activity monitoring
  - Monitor file & list access in real-time
  - Find unused data



- Policy based threat protection
  - Defend against file, Web and database threats

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Questions

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