

# Protecting Sensitive Data

## In Non-Production Oracle Applications Environments

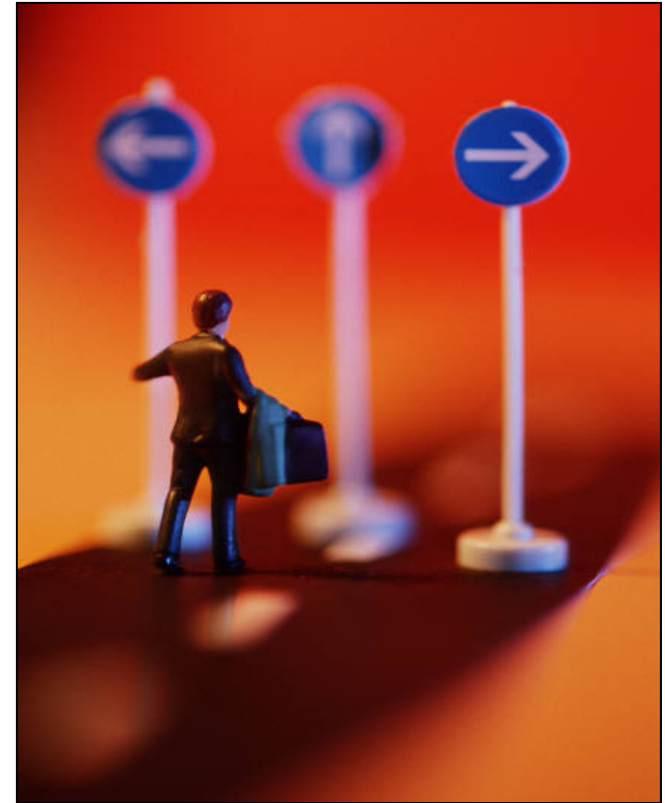
**Christopher Carriero**  
**Guardian Applications**

# Introduction

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## *Trend -*

- **Noun1.** a general direction of evolutionary change
- **Noun2.** Current style; vogue



# What's Out and What's In

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- Out

- SUV's
- Second Homes
- CD Players
- Cell Phones



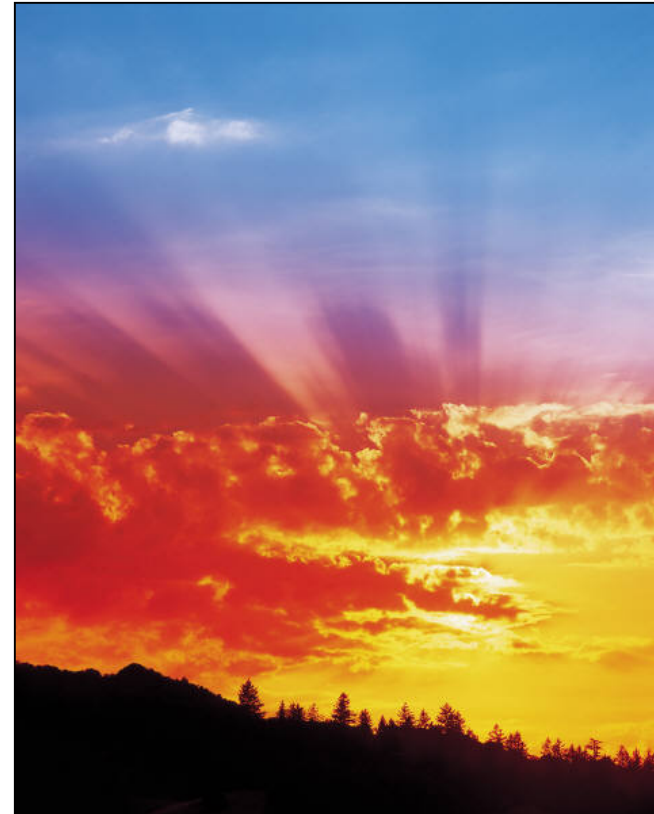
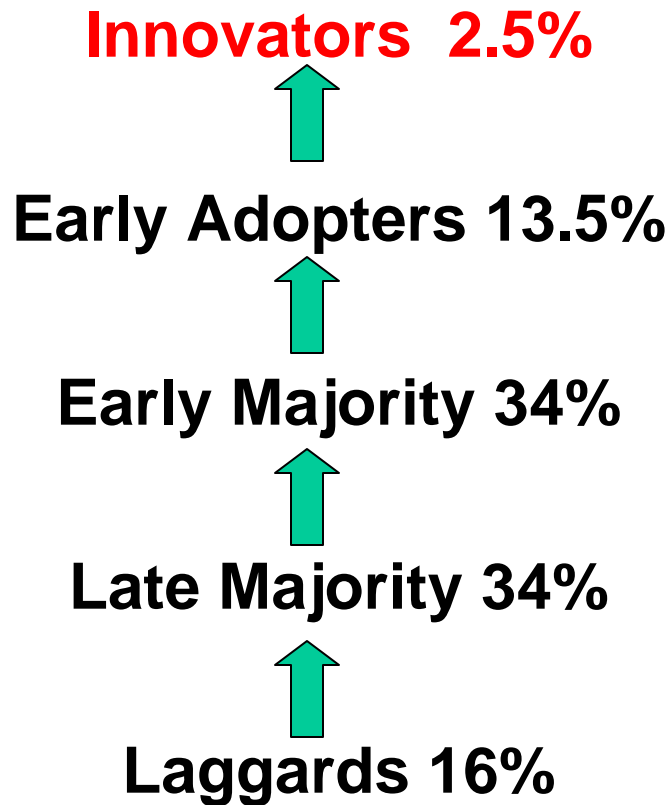
- In

- Public Transportation
- Timeshares
- MP3's
- PDA's



# Trend Acceptance Cycle

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# The Trend in IT Security

**Competitive Advantage**



**Risk Management**



**Compliance**



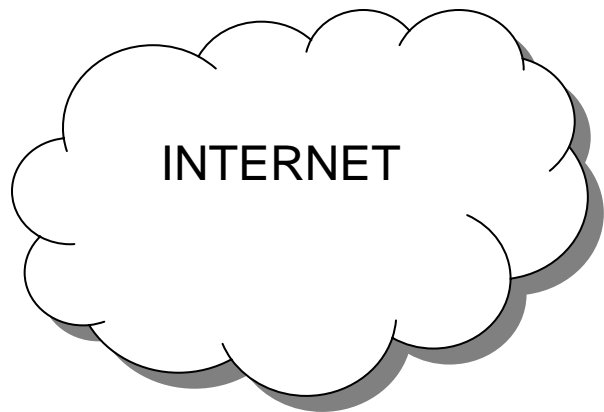
**Network Security**



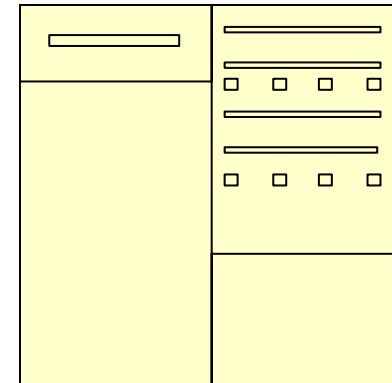
# In the Beginning of Security

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Entry Point



End Point





# Response to End Point Intrusion

- Firewalls
- Anti-Virus Software
- Intrusion Detection
- Smart Cards



# Performance Records

Oracle Applications - Vision

File Edit View Folder Tools Window Help

Performance(Martin, Mrs. Pam Angela (Pammie))

**Interview**

Type

Location

Date

Rating

Next Date



# Salary and Merit Information

Oracle Applications - Vision

File Edit View Folder Tools Window Help

Salary Administration(Tobinski, Miss Valerie Wilma (Val))

**Previous Proposal**

Date	15-JUL-2001	Salary Basis	Non-Exempt
Currency	USD	Last Value	16.53820
Bases/Year	2080	Annual Salary	34,399.45600
Conversion Rate	1.00000	Converted Salary	34,399.45600

**Salary Proposal**

Change Date	15-DEC-2003	Currency	USD
Change Value	1.65000	New Value	18.18820
Change %	9.977	Annual Salary	37,831.45600
Reason		<input checked="" type="checkbox"/> Approved	
Ranking		Next Review	15-DEC-2004
		Performance Review	

**Grade Salary Limits**

Grade	200.2.West
Currency	USD
Min Salary	31,200.00
Max Salary	104,000.00
Comparatio	55.964

**Salary Information**

Salary Basis	Non-Exempt
Pay Basis	Hourly Salary
Bases/Year	2080

**Proposal Components**

Reason	Change Value	Change %	Approved
Merit	1.65000	9.977	<input checked="" type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

Performance

# Health Records

Special Information(Martin, Mrs. Pam (Pam))

Information

Name	Exists
ADA Disabilities	<input type="checkbox"/>
<b>ADA Disability Accommodations</b>	<input type="checkbox"/>
Company Property	<input type="checkbox"/>
Disabilities	<input type="checkbox"/>

Details

Start Date	End Date	Detail
<b>13-JUL-2001</b>		<b>Hearing Problem.27-JAN-2007.APPROVE</b>

ADA Disability Accommodations

Description: **Hearing Problem**

Date Requested: **27-JAN-2007**

Status: **APPROVED** Approved

Confirmed By: **Dr. Phil**

Date Confirmed: **30-JUN-2001**

Date Provided: **30-JUN-2001**

Cost: **0.00**

OK Cancel Clear Help

# SSN and Marital Status

Oracle Applications - Vision

File Edit View Folder Tools Window Help

People

**Name**

Last **Martin**

First **Pam**

Title **Mrs.**

Prefix

Suffix

Middle

Gender **Female** Action

Person Type for Action

**Person Types**

**Employee.Applicant**

**Identification**

**Employee** **320**

Social Security **207-65-4320**

Personal Employment Office Details Applicant Background Rehire Further Name Medical Other Benefits

Birth Date **16-SEP-1966** Age **40**

Town of Birth **Mandan** Status **Married**

Region of Birth **North Dakota** Nationality **American**

Country of Birth **United States** Registered Disabled **Yes - Partially Disabled**

**Effective Dates**

From **30-AUG-2000** To

Latest Start Date **07-MAR-1999** [ M ]

Address Picture Assignment Special Info Others...

# HR and Payroll Data is a Target

- A data security breach is reported every 3 days
  - » Computer World
- 50 – 70% of the time the security breach happens on the worksite
  - » Alexander Hamilton Institute
- **90%** of corporate thefts target HR and Payroll records
  - » Federal Trade Commission
- **61%** of say that data leakage is the doing of insiders
  - » McAfee Datagate





# The Data is a Goldmine!!!!

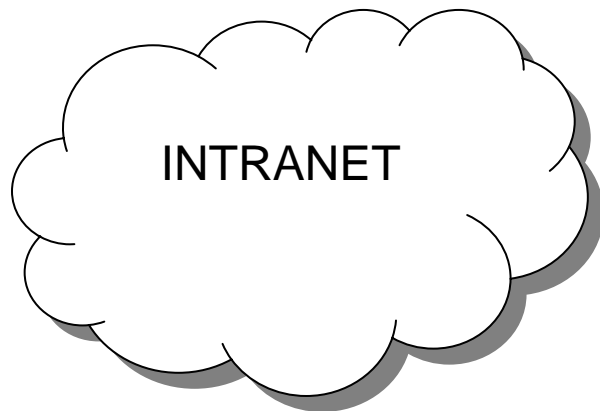
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- Social Security Numbers
- Names and Addresses
- Salary and Bonus Information
- Bank Account Numbers
- Tax and Withholding Information
- Medical Information

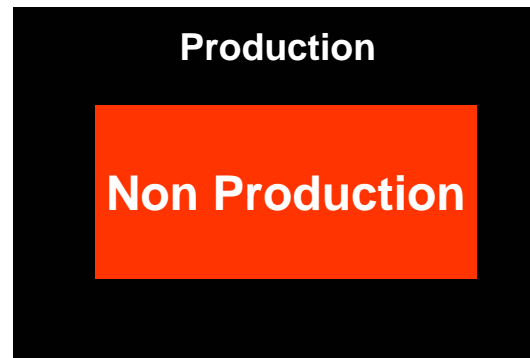


# Vulnerability Exposed

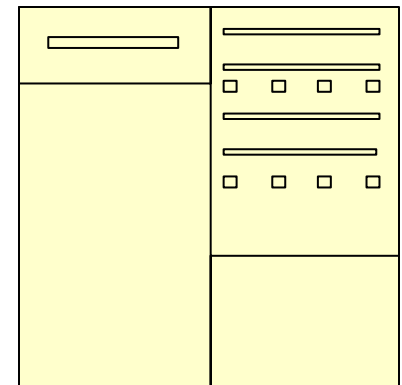
Entry Point



Application



End Point





# Emerging Direction of Security

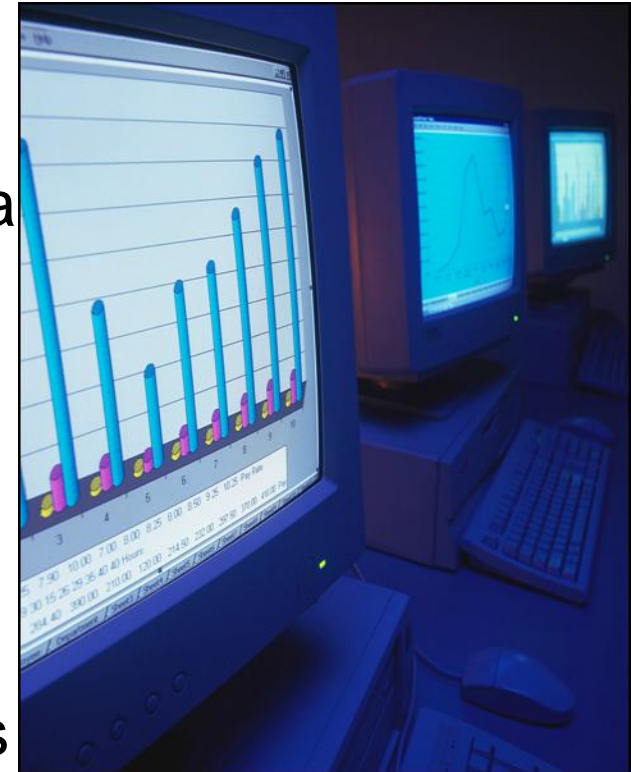
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- External to Internal
- Database to Application
- Production to Non Production
- Compliance to Risk Management
- Hardship to Opportunity



## Early Adopters Response to Internal Threats

- IT and Business teams joined forces
- Inventoried and classified sensitive data
- Determined value of the sensitive data
- Reassessed data collection and storage
- Created privacy policies and procedures



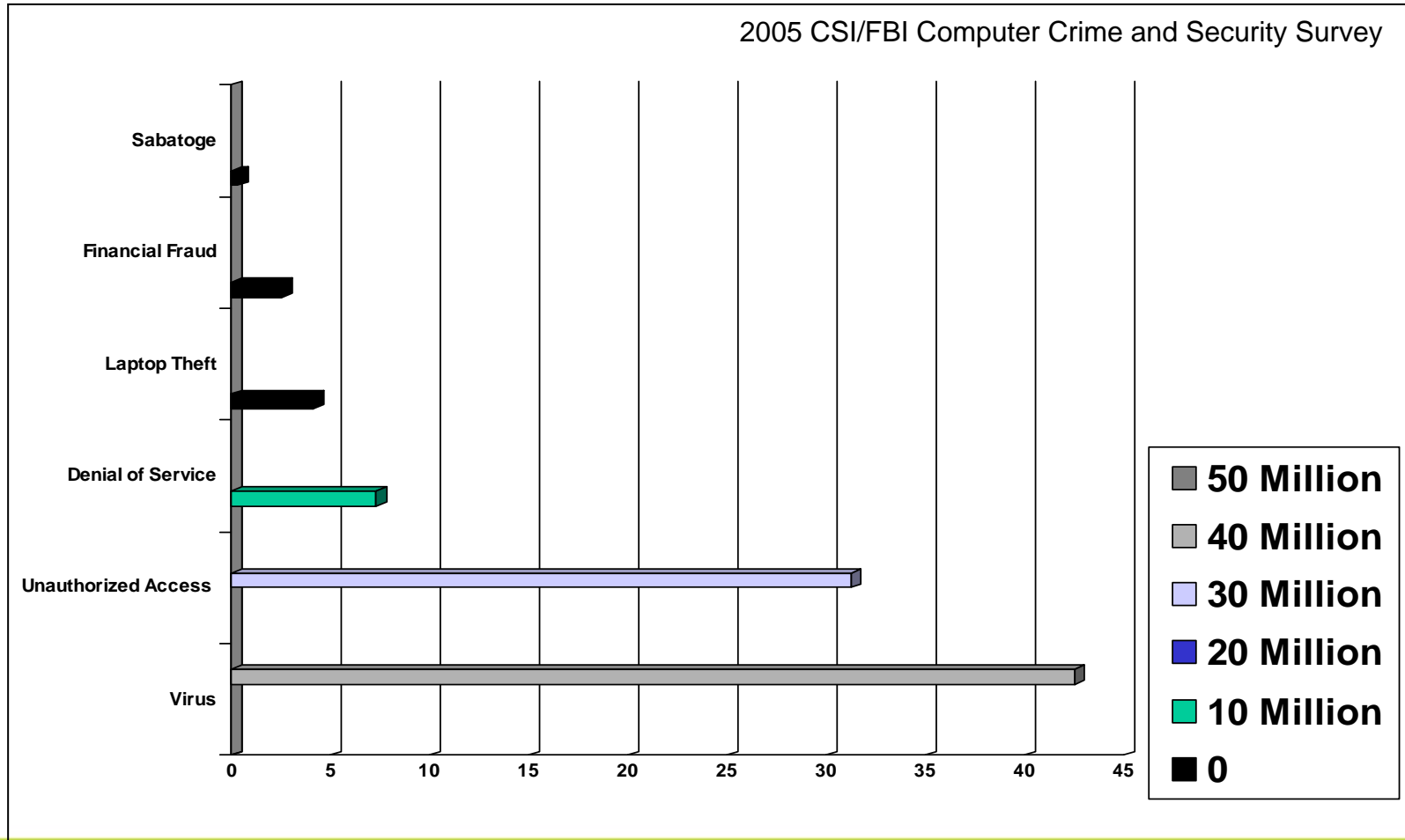
# Audits Reveal Vulnerabilities

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- Cloning Production
- Apps Password Distribution
- Querying the Database
- Uncontrolled Development & Testing Environments



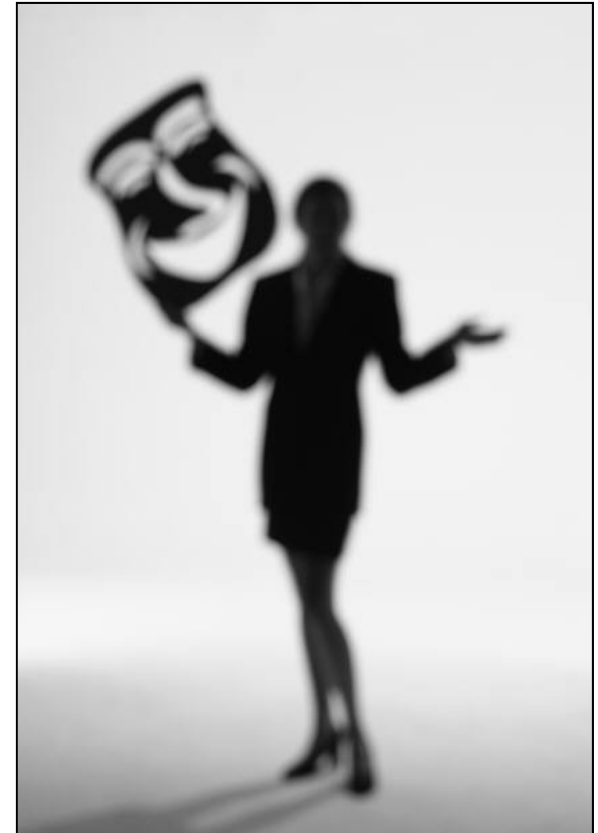
# Dollars Lost by Incident Type



# New Technologies

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- Begin secure coding practices
- Encryption for data at rest
- Encryption for data in transit
- Table Truncate Routines
- Data Masking/Scrambling



# Special Considerations in ERP

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- Maintain Data Integrity
- Include Value Sets
- Verify Connections
- Salary Tie Out





# Protecting Confidential HR Info

## Before Scramble

People

**Name**

Last **Martin**

First **Pam**

Title **Mrs.**

Prefix

Suffix

Middle

Gender **Female** Action

Person Type for Action

**Person Types**

Employee.Applicant

**Identification**

Employee **320**

Social Security **207-65-4320**

Personal Employment Office Details Applicant Background Rehire Further Name Medical Other Benefits

Birth Date **16-SEP-1966**

Town of Birth **Mandan**

Region of Birth **North Dakota**

Country of Birth **United States**

Age **40**

Status **Married**

Nationality **American**

Registered Disabled **Yes - Partially Disabled**

## After Scramble

People

Last **GDBQW**

First **QXT**

Title **BXT.**

Prefix

Suffix

Middle **XQF**

Gender **Female** Action

Person Type for Action

**Person Types**

Employee.Applicant

**Identification**

Employee **320**

Social Security **326-74-0005**

Personal Employment Office Details Applicant Background Rehire Further Name Medical Other Benefits

Birth Date **01-JAN-1950**

Town of Birth **OWL VAB**

Region of Birth **RMGJJ BQTEMN**

Country of Birth **United States**

Age **57**

Status **AGNTXGJ**

Nationality **EBELVKFA**

Registered Disabled **XOQ - UAUNJQWKP CMLPAI**

# Accurate Statement of Earnings

## Before Scramble

Period Start	Period End	Payment Date	Check Number
24-DEC-2001	30-DEC-2001	04-JAN-2002	10401, NACHA
Federal Filing Status	Fed Allowances	State	
Single	2	Single	
EARNINGS			
Description	Hours	Amount	Year To Date
Regular Wages	40.00	720.00	720.00
		Year To Date	
Gross Pay	720.00	720.00	
Pre-Tax Deductions	37.06	37.06	
Tax Deductions	194.63	194.63	
Other Deductions	1.34	1.34	
NET PAY	486.97	486.97	

## After Scramble

Period Start	Period End	Payment Date	Check Number
24-DEC-2001	30-DEC-2001	04-JAN-2002	10401, NACHA
Federal Filing Status	Fed Allowances	State	
Single	2	Single	
EARNINGS			
Description	Hours	Amount	Year To Date
Regular Wages	40.00	9119.22	9119.22
		Year To Date	
Gross Pay	9119.22	9119.22	
Pre-Tax Deductions	469.39	469.39	
Tax Deductions	2465.10	2465.10	
Other Deductions	16.97	16.97	
NET PAY	6167.76	6167.76	

720  
 -37.06  
 -194.73  
 -1.34  
 -----  
 486.97

9119.22  
 - 469.39  
 -2465.10  
 -16.97  
 -----  
 6167.76

# Correct Salary History Calcs

Salary History(Martin, Mrs. Pam Ann (Martin))

Change Date	Review Date	Reason	Approved	Currency Code	Previous	Change	%	Actual
16-DEC-2003			<input checked="" type="checkbox"/>	USD	19.83000	1.39000	7.01	21.22000
31-DEC-2002			<input checked="" type="checkbox"/>	USD	19.26000	0.57000	2.96	19.83000
01-JAN-2002			<input checked="" type="checkbox"/>	USD	18.00000	1.26000	7.0	19.26000
07-MAR-1999			<input checked="" type="checkbox"/>	USD				18.00000
			<input type="checkbox"/>					

Increase percentage remains the same after scrambling.

Salary History(GDBQW, FFB. QXT XQF (HEQBJJ))

Change Date	Review Date	Reason	Approved	Currency Code	Previous	Change	%	Actual
16-DEC-2003			<input checked="" type="checkbox"/>	USD	251.15855	17.60516	7.01	268.76371
31-DEC-2002			<input checked="" type="checkbox"/>	USD	243.93916	7.21938	2.96	251.15855
01-JAN-2002			<input checked="" type="checkbox"/>	USD	227.98053	15.95864	7.0	243.93916
07-MAR-1999			<input checked="" type="checkbox"/>	USD				227.98053
			<input type="checkbox"/>					

Previous+Change =Actual

# Banks

## Before Scramble

Banks (Vision Operations: USD)

Bank		Bank Branch	
Name	B.N.P.	Name	B.N.P. de Ternes
Alternate Name		Alternate Name	B.N.P. de la place des Ternes
Number	12345	Number	09876
RFC Identifier		Type	OTHER
Institution	Bank	EDI ID Number	
Description		EDI Location	
Inactive On		EFT Number	88888888 [ ]
Address		BIC	BNABFRPPTRE
Country	France	State	
Address	6, Place des Ternes	County	
City	Paris	Postal Code	75008
Province		Alternate Address	

Transmission Details    Related Banks    Bank Accounts

## After Scramble

Banks (Vision Operations: USD)

Bank		Bank Branch	
Name	B.N.P.	Name	B.N.P. de Ternes
Alternate Name		Alternate Name	B.N.P. de la place des Ternes
Number	12345	Number	09876
RFC Identifier		Type	OTHER
Institution	Bank	EDI ID Number	
Description		EDI Location	
Inactive On		EFT Number	40212432 [ ]
Address		BIC	LHREMZDIZTI
Country	France	State	
Address	6, Place des Ternes	County	
City	Paris	Postal Code	75008
Province		Alternate Address	

Transmission Details    Related Banks    Bank Accounts

# Bank Accounts

## Before Scramble

Bank Accounts (Vision Operations: USD)

Bank Name: **Banca Commerciale Italiana** Branch Name: **Commerciale,FILIALE CINECT**

**Bank Accounts**

Operating Unit: **Vision Operations** Agency Location Code:

Name: **TEST BANK ACCOUNT** Alternate Name:

Account Use: **Internal** Account Type:

Number: **1234567843** IBAN:

Currency: **USD** Inactive On:

Description:  Check Digits:  [ ]

Allow Assignment to Multiple Suppliers

GL Accounts | Account Contact | Account Holder | Receivables O... | More Receivabl... | Payables Optio... | Supplier Assign...

	GL Account	Description
Cash	<b>01-110-6100-0000-000</b>	<b>Operations-Facilities Resources-Mi</b>
Cash Clearing		
Bank Charges		
Bank Errors		
Confirmed Receipts		
Future Dated Payment		

Payables Documents | Bank Codes

## After Scramble

Bank Accounts (Vision Operations: USD)

Bank Name: **Banca Commerciale Italiana** Branch Name: **Commerciale,FILIALE CINECT**

**Bank Accounts**

Operating Unit: **Vision Operations** Agency Location Code:

Name: **TEST BANK ACCOUNT** Alternate Name:

Account Use: **Internal** Account Type:

Number: **8433296540** IBAN:

Currency: **USD** Inactive On:

Description:  Check Digits:  [ ]

Allow Assignment to Multiple Suppliers

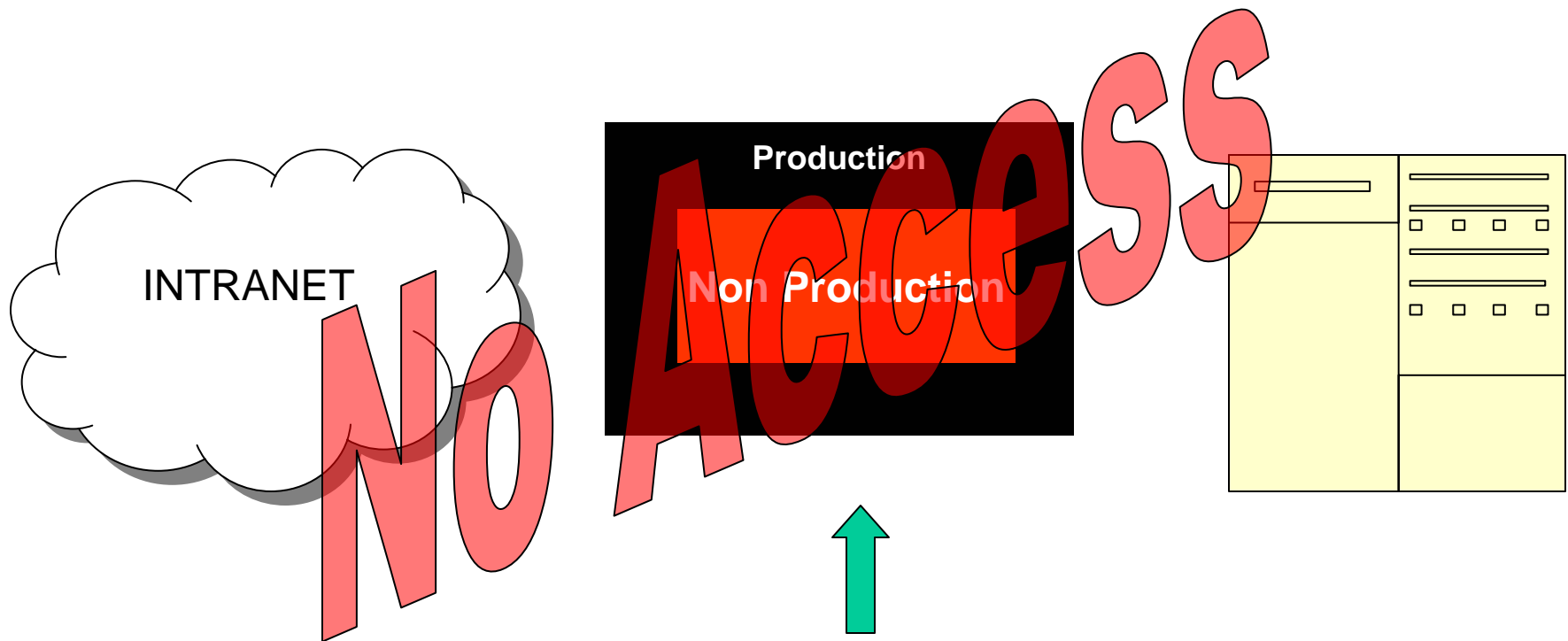
GL Accounts | Account Contact | Account Holder | Receivables O... | More Receivabl... | Payables Optio... | Supplier Assign...

	GL Account	Description
Cash	<b>01-110-6100-0000-000</b>	<b>Operations-Facilities Resources-Mi</b>
Cash Clearing		
Bank Charges		
Bank Errors		
Confirmed Receipts		
Future Dated Payment		<b>Operations-No Department-Future</b>

Payables Documents | Bank Codes

# True Risk Management Requires a Layered Approach

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# Greatest Motivation for Changes IT Security Practices

- 56% - Compliance with Regulations
- 47% - Privacy and Personal Data Protection
- 41% Meeting Business Objectives

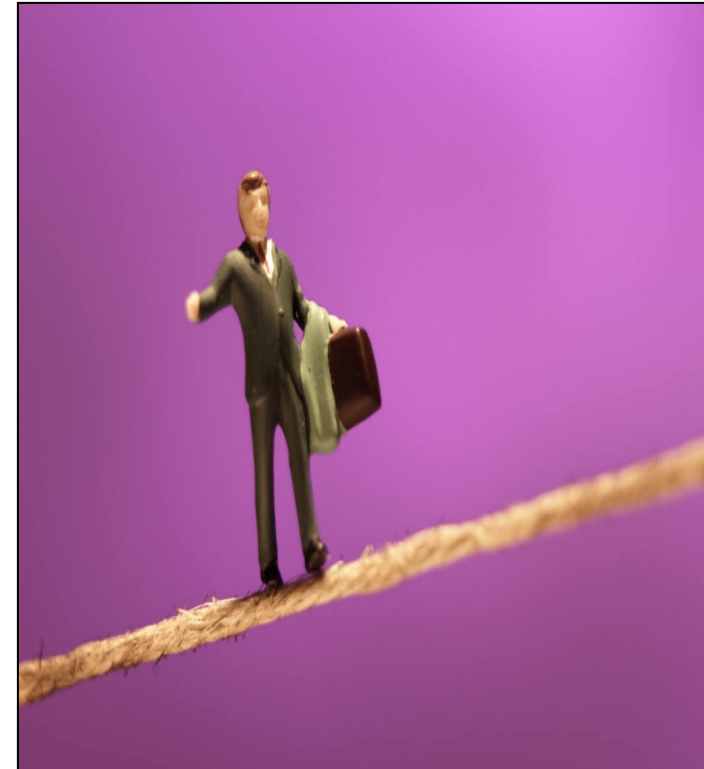


Ernest & Young Global Information Security Survey 2006

## Beyond Compliance – Risk Management

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- Risk Management is a continuous process
- Transitions corporation from reactive to proactive approach
- Provides more complete evaluations of opportunities
- Allows better decision making
- Helps manage executive expectations

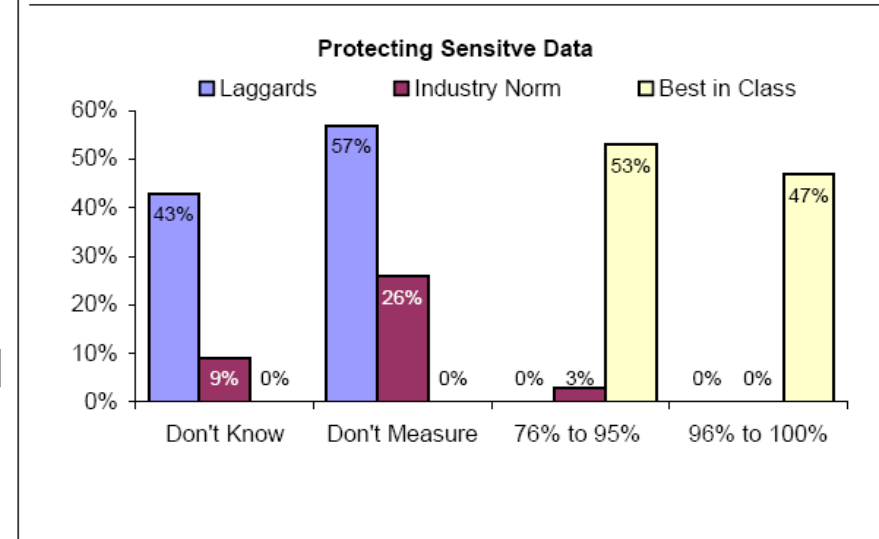


# The Early Adopters are also the Best in Class

## Best in Class:

- Protected sensitive data from internal threats
- Protected sensitive data from external threats
- Increased the percentage of sensitive data being protected
- Saw a decrease in data breaches in last year

**Figure 1: Attending to Data Use**



The Aberdeen Group May 2007

# The Most Trusted Industries Make Privacy a Priority

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- Healthcare
- Consumer Product Companies
- Banks & Brokerages

» Ponemon Institute's Most Trusted Companies 2007



# Best in Class Gain Competitive Advantage

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- Understand confidential data is a business asset
- Experience improved decision making
- See Risk Management as a way to protect brand image
- Report that Risk Management enhances reputation
- Find that Risk Management increases appeal for job candidates



# The Trend in IT Security

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**Competitive Advantage**



**Risk Management**



**Compliance**



**Network Security**





# Conclusion

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- Oracle HR and Payroll data is a target
- Take inventory of security risks
- Don't be afraid to spend money on technology
- Don't let sensitive data out of the building
- Remember you can be the best in class and take the competitive advantage



**Christopher Carriero**

**President**

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