

# Overcoming the Chaos

An Information Governance Approach to  
Managing Unstructured Data

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Illinois Institute of Technology

# What is *Unstructured Data*?

- Data which is not stored in a database
- Electronic documents where the contents can take any shape



# What is *Information Governance*?

- Making decisions about what should be done with information
- Promotes the idea that information is an organizational asset
  - (not just the responsibility of the Information Technology Dept.)



# Where I'm coming from...

- Previously employed at Toyota & GM auto-manufacturing plant
  - NUMMI (New United Motors Manufacturing Inc.)
- Involvement in the development of NUMMI's Information Governance Program
  - Came up with organization & security designs for company data
  - Piloted these designs using
    - IT Department data
    - Content/Record Management Systems

# Inspiration for this project...

- I learned a LOT about challenges of organizing & securing data at a large company
- A particularly frustrating challenge:

Once we determined how data should be organized and secured,

- Technology solutions did not allow for these controls
- Technology solutions offered too much unneeded functionality

# Unfortunately...

- NUMMI closed April 1<sup>st</sup>, 2011
- Information Governance Program was never completed

# Experiences left me wondering...

- Instead of starting with the technology and asking:
  - *How can we use this technology to organize and secure our data?*
- What if we started with the data and asked:
  - *How **should** our information be organized and secured?*

# The Goal

1. Use Information Governance activities to
  - Understand unstructured data,
  - Categorize unstructured data.
2. Use information gathered to create strategies for
  - Organizing unstructured data,
  - Securing unstructured data.









# To help tell the story...

- Company X
  - Is beginning an Information Governance Program
    - Wants to organize and secure unstructured data!
  - Also, going through a PeopleSoft HR Upgrade
    - This will provide specific examples for the presentation
- 4 employees will help tell the story...

# Meet our Company X employees!

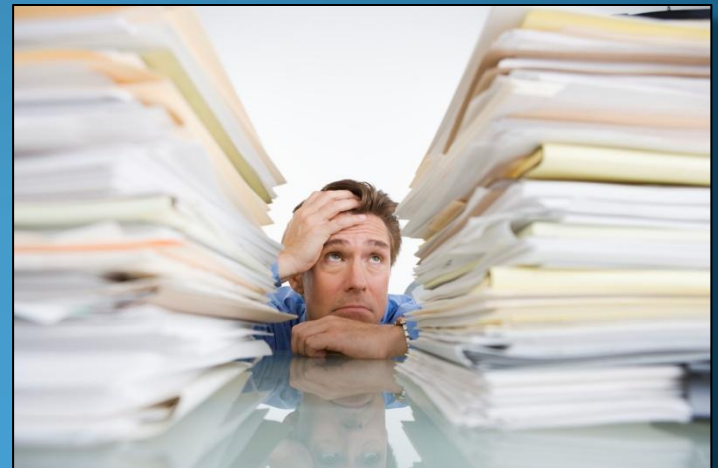
Name	Responsibility
 <p>Harriet Human Resources</p>	<ul style="list-style-type: none"><li>•HR Specialist</li><li>•PeopleSoft HR Upgrade - Business Lead</li></ul>
 <p>Ralph Requisition</p>	<ul style="list-style-type: none"><li>•Purchasing Specialist</li><li>•PeopleSoft HR Upgrade - handles purchasing for the project</li></ul>
 <p>Tammy Technology</p>	<ul style="list-style-type: none"><li>•IT Manager</li><li>•PeopleSoft HR Upgrade - Project Manager</li></ul>
 <p>Carl Computer</p>	<ul style="list-style-type: none"><li>•IT Contractor</li><li>•PeopleSoft HR Upgrade - Developer</li></ul>

# Information Governance Activities Used:

- ***Information Assessment***
  - Gathering & understanding all information existing in the organization
- ***Records Retention***
  - Categorizing information and determining how long documents in each category should be kept
- ***Information Classification***
  - Identifying which information is sensitive and creating labels and handling rules for each level of sensitivity

# Information Assessment

Gathering & understanding all information existing in the organization.



# Why Information Assessment?

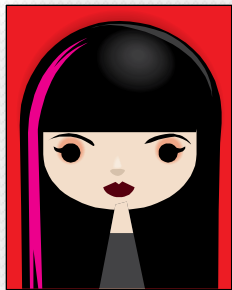
- Required to set direction and scope
- Necessary for developing an effective information governance program.
  - You can't govern something you don't understand



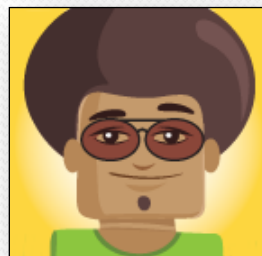
# In other words...

“There is so much information!  
We don’t even know where to start!

How the heck are we supposed to organize and  
secure it if we don’t even know what we have??”



Harriet Human  
Resources



Carl Computer



Tammy Technology



Ralph Requisition

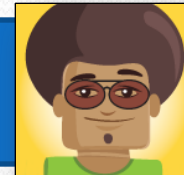
# Many different approaches...

- Technology Approach
  - Data Classification tools, Profiling tools, Fileshare crawlers
- Interview Approach
  - Interview business owners to determine which information is important
- Process Flow Information Discovery
  - Use process flow diagrams to identify information for each business process
  - (developed by Marika Taylor @ NUMMI)

# Many different approaches...

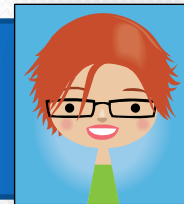
- Technology Approach

- Carl Computer runs a tool



- Interview Approach

- “So, Tammy Technology...  
what information is important to IT?”



- Process Flow Information Discovery

- Each key subject matter expert does a process flow chart  
of their processes to identify documents used





# Process Flow Information Discovery

1. Identify department **business functions**

- *Completed by Department Management* →



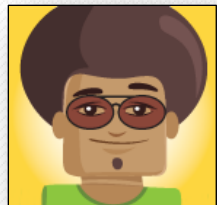
2. Identify supporting **business processes**

- *Completed by Department Management* →



3. Diagram **process flows**

- *Completed by Key Subject Matter Experts* →



# Process Flow Information Discovery

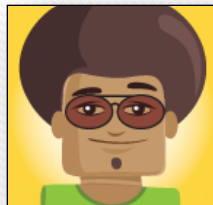
- Example...

## IT Department *Business Functions:*

- Business Planning
- Operations Maintenance
- System Development



*Tammy Technology:*  
“These are all the  
functions of IT!”



# Process Flow Information Discovery

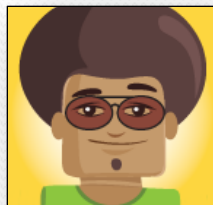
- Example...

## IT Department *Business Functions:*

- Business Planning
- Operations Maintenance
- System Development



*Tammy Technology:*  
“Business Planning is anything related to the administration or budgeting”

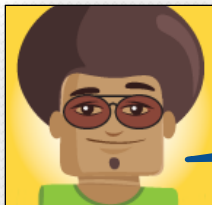


# Process Flow Information Discovery

- Example...

## IT Department *Business Functions:*

- Business Planning
- Operations Maintenance
- System Development



*Tammy Technology:*

“System Development  
Is anything related to  
the development of  
systems  
(like documents created  
as part of a system  
upgrade)”

*Carl Computer:*

“Like PeopleSoft HR  
Upgrade documents!”

# Process Flow Information Discovery

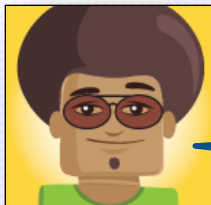
- Example...

## IT Department *Business Functions:*

- Business Planning
- Operations Maintenance
- System Development



*Tammy Technology:*  
“Operations  
Maintenance is  
anything related to  
regular system  
upkeep & use.”



*Carl Computer:*  
“Awesome!”

# Process Flow Information Discovery

- Example...

## IT Department *Business Functions:*

- Business Planning
- Operations Maintenance
- System Development



- **Operations Maintenance**  
*Business Processes:*
  - Incident & problem management processes
  - System maintenance processes
  - Service request management processes
  - System security & compliance management processes

# Process Flow Information Discovery

- Example...

## IT Department *Business Functions:*

- Business Planning
- Operations Maintenance
- Development

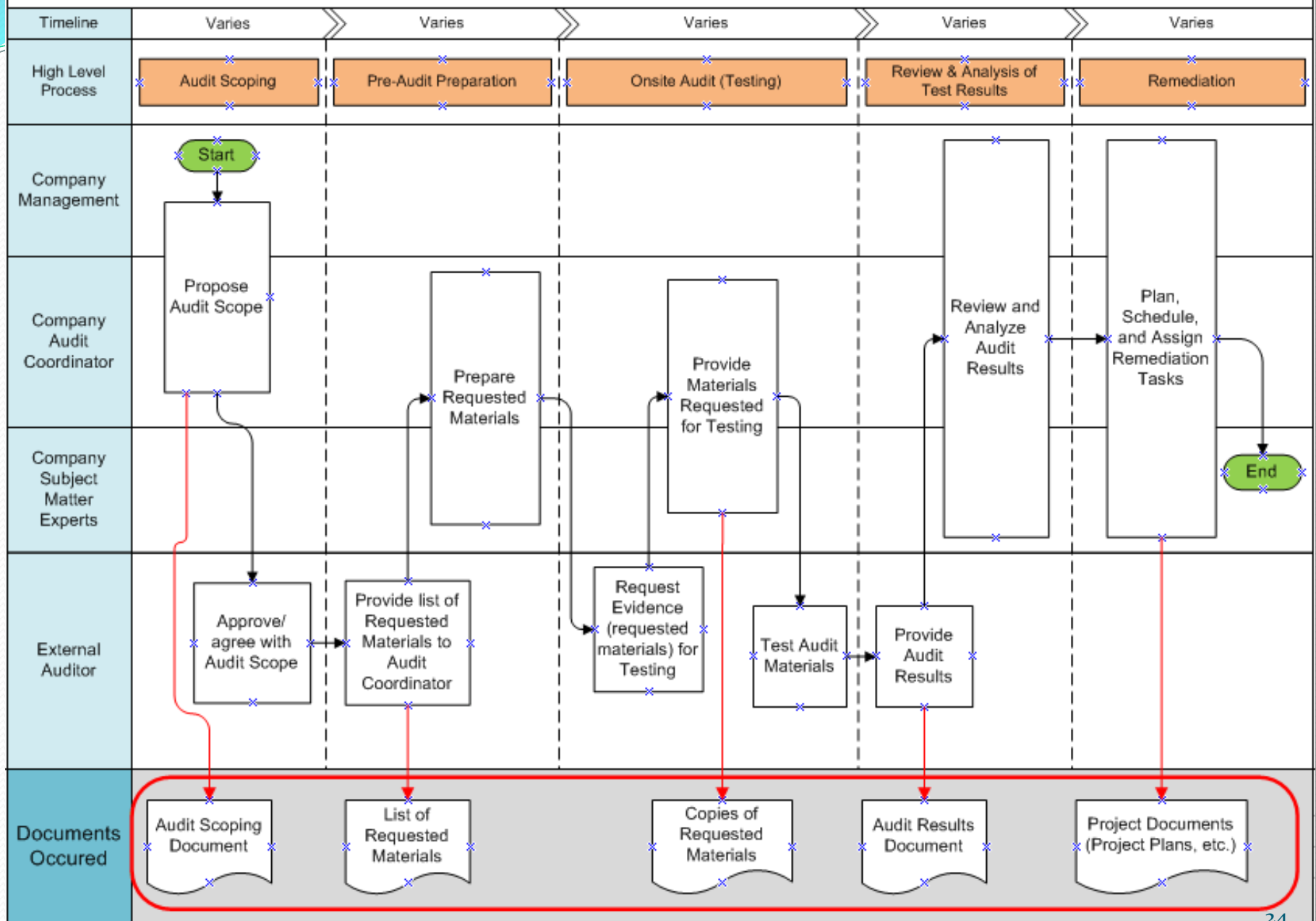
**Carl  
Computer:**  
“Like the  
annual  
audit  
process!”



- **Operations Maintenance  
*Business Processes:***

- Incident & problem management processes
- System maintenance processes
- Service request management processes
- System security & compliance management processes

# Process Flow Information Discovery Chart – *Basic Audit Process*



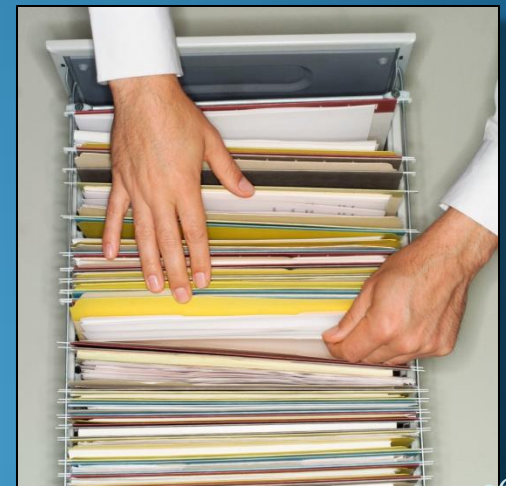


# How is Information Assessment Applied to Unstructured Data?

- Process Flow Information Discovery Chart method is useful for 2 reasons:
  - Enables understanding of key information, required for business
  - Department business functions & processes can be used as an organizational structure for unstructured data

# Records Retention

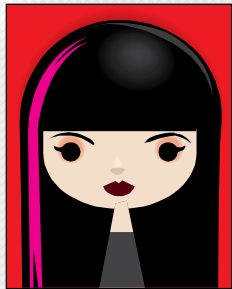
Categorizing information and determining how long documents in each category should be kept.



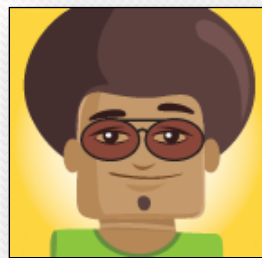
# In other words...

“Ok, now we know what we have...

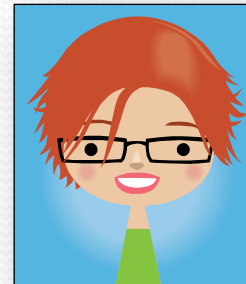
When is it ok to get rid of it?”



Harriet Human  
Resources



Carl Computer



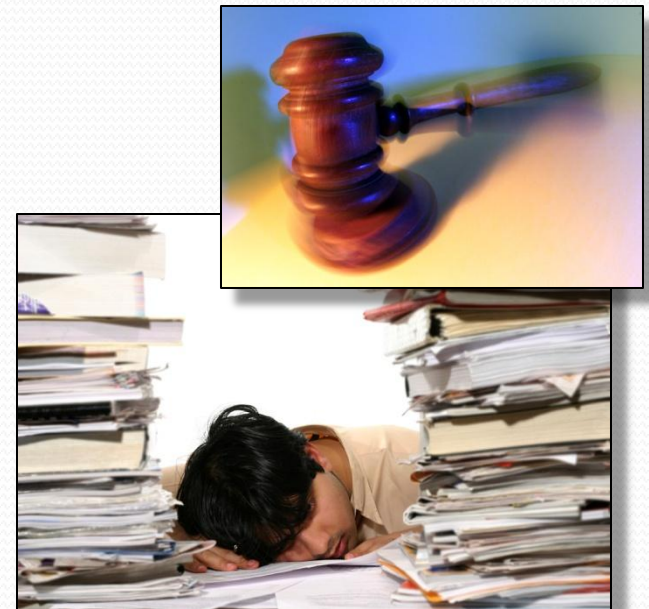
Tammy Technology



Ralph Requisition

# Why Records Retention?

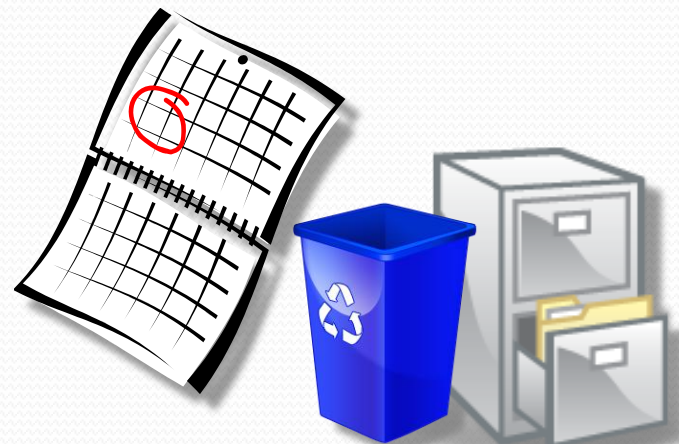
- Why not keep everything?
  - Risk of a “smoking gun”
  - Inefficient – wading through old information is unproductive.
- What could happen if information is disposed too soon?
  - Litigation risk (example: Arthur Anderson Trial)
  - Impact to ongoing operations



# Solution:

- Develop a ***Records Retention Schedule***
  - “a document that an organization uses to ensure that records are kept only as long as legally and operationally required, and that obsolete records are disposed of in a systematic and controlled manner.”

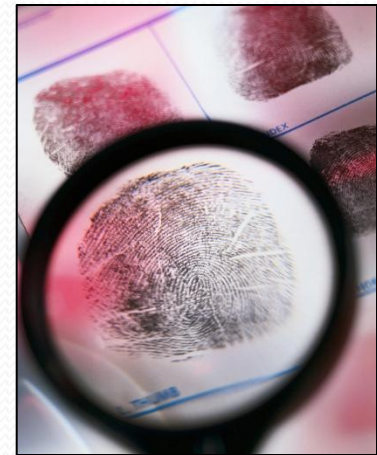
(Iron Mountain, n.d.)



# But wait! ...What is a Record?

- “a file that gives an evidential account of either a whole incident or part of an incident that occurred in the past.
- The record provides the factual information concerning that incident”

(Adam, 2008)



# Example:

## *Tammy Technology:*

“Woohoo! The project spending committee signed off on the PeopleSoft HR Upgrade business case!”



- The signed business case is a **record** of this event
  - Contains evidence that the company approved this project

# Records Retention Schedule

1. Identify “Records” vs. “Working Copies”
2. Develop taxonomy:
  - *Record Function*
  - *Record Class*
  - *Information Type (and ID #)*
3. Determine retention (**Event + Time** format)
  1. Legal Requirements
  2. Operational Requirements
4. Determine owning departments

**Example:**  
Drafts of a record  
that never  
become final



## Company X

### ~Record Retention Schedule~

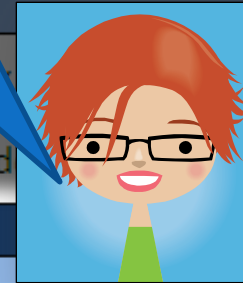
ID	Information Type	Retention	Owning Department
<b>Record Function: Accounting &amp; Finance</b>			
<b>Record Class: Purchasing, Procurement</b>			
008	Purchase Orders, Requisitions (General)	Open Tax Audit + 0 yrs	Purchasing
009	Business Cases, Vendor Bids, Proposals, Quotations	Superseded + 10 yrs	Purchasing
<b>Record Function: Administrative Operations</b>			
<b>Record Class: Technology Administration</b>			
010	Applications or Systems Development Documentation	Life of System + 0 yrs	Information Technology
011	Applications or Systems Maintenance Documentation	Superseded + 0 yrs	Information Technology
<b>Record Function: Human Resources</b>			
<b>Record Class: Benefits Administration</b>			
012	Employee Benefits Management	Employee Termination + 6 yrs	Human Resources
013	Employee Educational Assistance	Employee Termination + 6 yrs	Human Resources
<b>Record Class: Medical Administration</b>			
014	Employee General Evaluations, Screenings & Testing Medical Files	Employee Termination + 6 yrs	Human Resources
015	Employee Hazardous Materials, Toxic Substances & Injuries Medical Files	Employee Termination + 30 yrs	Human Resources

**Tammy Technology:**

“Technical records from the PeopleSoft HR Upgrade would fall into this category.

These are owned by IT and should be kept for the life of the system.”

Rule~  
Retention      Owning Department



**Record Function: Administrative Operations**

**Record Class: Technology Administration**

010	Applications or Systems Development Documentation	Life of System + 0 yrs	Information Technology
011	Applications or Systems Maintenance Documentation	Superseded + 0 yrs	Information Technology

**Record Function: Human Resources**

**Record Class: Benefits Administration**

012	Employee Benefits Management	Employee Termination + 6 yrs	Human Resources
013	Employee Educational Assistance	Employee Termination + 6 yrs	Human Resources

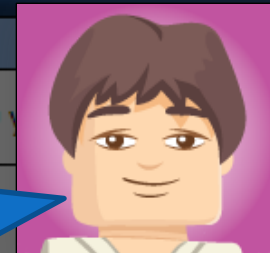
**Record Class: Medical Administration**

014	Employee General Evaluations, Screenings & Testing Medical Files	Employee Termination + 6 yrs	Human Resources
015	Employee Hazardous Materials, Toxic Substances & Injuries Medical Files	Employee Termination + 30 yrs	Human Resources

# Company X

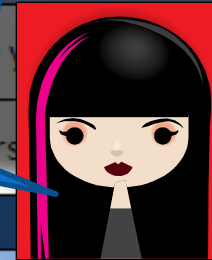
## ~Record Retention Schedule~

ID	Information Type	Retention	Owning Department
<b>Record Function: Accounting &amp; Finance</b>			
<b>Record Class: Purchasing, Procurement</b>			
008	Purchase Orders, Requisitions (General)	Open Tax Audit + 0 yrs	Purchasing
009	Business Cases, Vendor Bids, Proposals, Quotations	Superseded + 10 yrs	Purchasing
<b>Record Function: Administrative Operations</b>			
<b>Record Class: Technology Administration</b>			
010		of System + 0 yrs	Information Technology
011			Information Technology
012		Employee Termination rs	Human Resources
013		Employee Termination rs	Human Resources
014		Employee Termination rs	Human Resources
015	Injuries Medical Files	Employee Termination + 30 yrs	Human Resources



**Ralph Requisition:**  
 “The signed charter for the PeopleSoft HR Upgrade would fall into this category since it has to do with company spending.  
 These records are owned by Purchasing.”

**Harriet Human Resources:**  
 “HR owns a lot of records that need to be kept for legal reasons.  
 For example, OSHA requires us to keep medical records for 30 years after an employee is terminated.”



ID	Record Function	Record Class	Retention	Owning Department
008	Purchasing		0 yrs	Purchasing
009	Business		0 yrs	Purchasing
010	Applications or Systems Maintenance Documentation		0 yrs	Information Technology
011	Applications or Systems Maintenance Documentation	Supervisory	0 yrs	Information Technology
<b>Record Function: Human Resources</b>				
<b>Record Class: Benefits Administration</b>				
012	Employee Benefits Management		Employee Termination + 6 yrs	Human Resources
013	Employee Educational Assistance		Employee Termination + 6 yrs	Human Resources
<b>Record Class: Medical Administration</b>				
014	Employee General Evaluations, Screenings & Testing Medical Files		Employee Termination + 6 yrs	Human Resources
015	Employee Hazardous Materials, Toxic Substances & Injuries Medical Files		Employee Termination + 30 yrs	Human Resources

# How is Record Retention Applied to Unstructured Data?

- Record Retention Schedule is useful for several reasons:
  - Enables understanding of Records vs. Working Copies
  - “Information Type,” & “Owning Department” can be used as metadata for unstructured data
  - Provides rules on when unstructured data must be disposed
  - Taxonomy can be used as an organization structure for unstructured data Records

# Information Classification

Identifying which information is sensitive and creating labels and handling rules for each level of sensitivity.





# Why Information Classification?

- Prioritize data security according to risk!
  - Information classifications define how data should be handled and protected at each risk level



# Example:



*Carl Computer:*

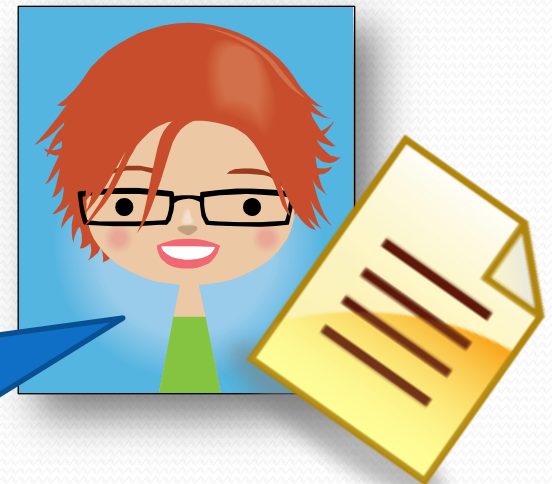
“This list of PeopleSoft HR admin passwords could really hurt the company if it fell into the wrong hands!

I should make sure I really protect it!”

*Tammy Technology:*

“This shopping list for the PeopleSoft HR Upgrade Party probably won’t hurt the company.

I don’t need to worry too much about protecting it.”





# Information Classification Levels

- “**Public** – Information, that if disclosed outside the company, would not harm the organization, its employees, customers, or business partners
- **Internal Use Only**—Information that is not sensitive to disclosure within the organization, but could harm the company if disclosed externally.
- **Company Confidential**—Sensitive information that requires ‘need to know’ before access is given.”  
(Appleyard, 2007)

# Information Governance Applied to *Unstructured Data*

Use information gathered to create strategies for

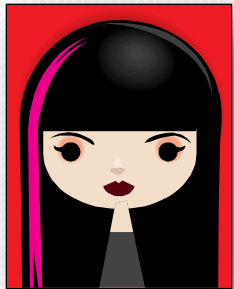
- Organizing unstructured data
- Securing unstructured data



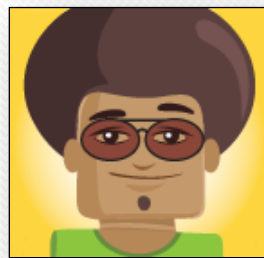
# In other words...

“Now we know what we should be doing with our data...

Now how do we make sure we actually are doing it with unstructured data?”



Harriet Human  
Resources



Carl Computer



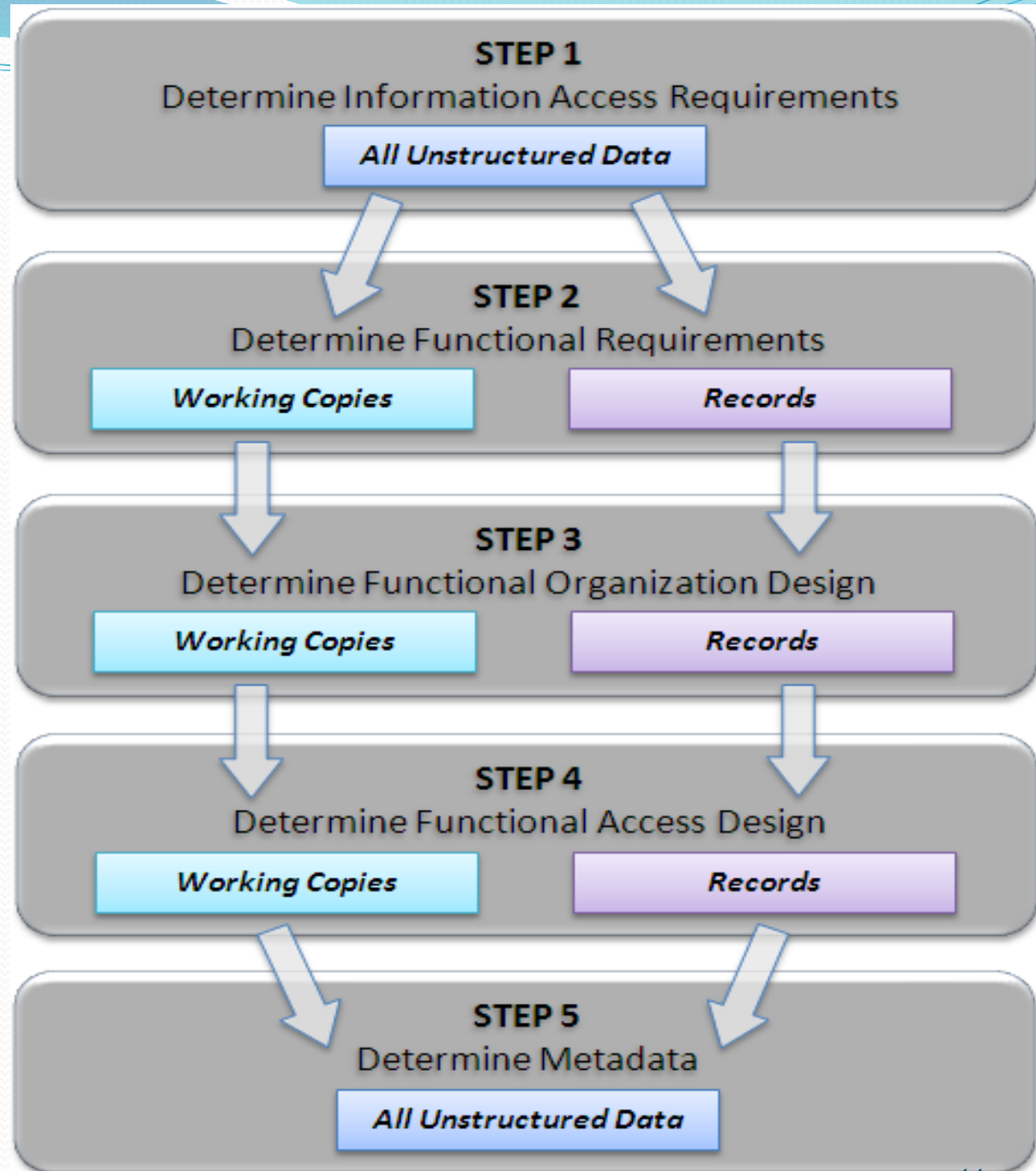
Tammy Technology



Ralph Requisition

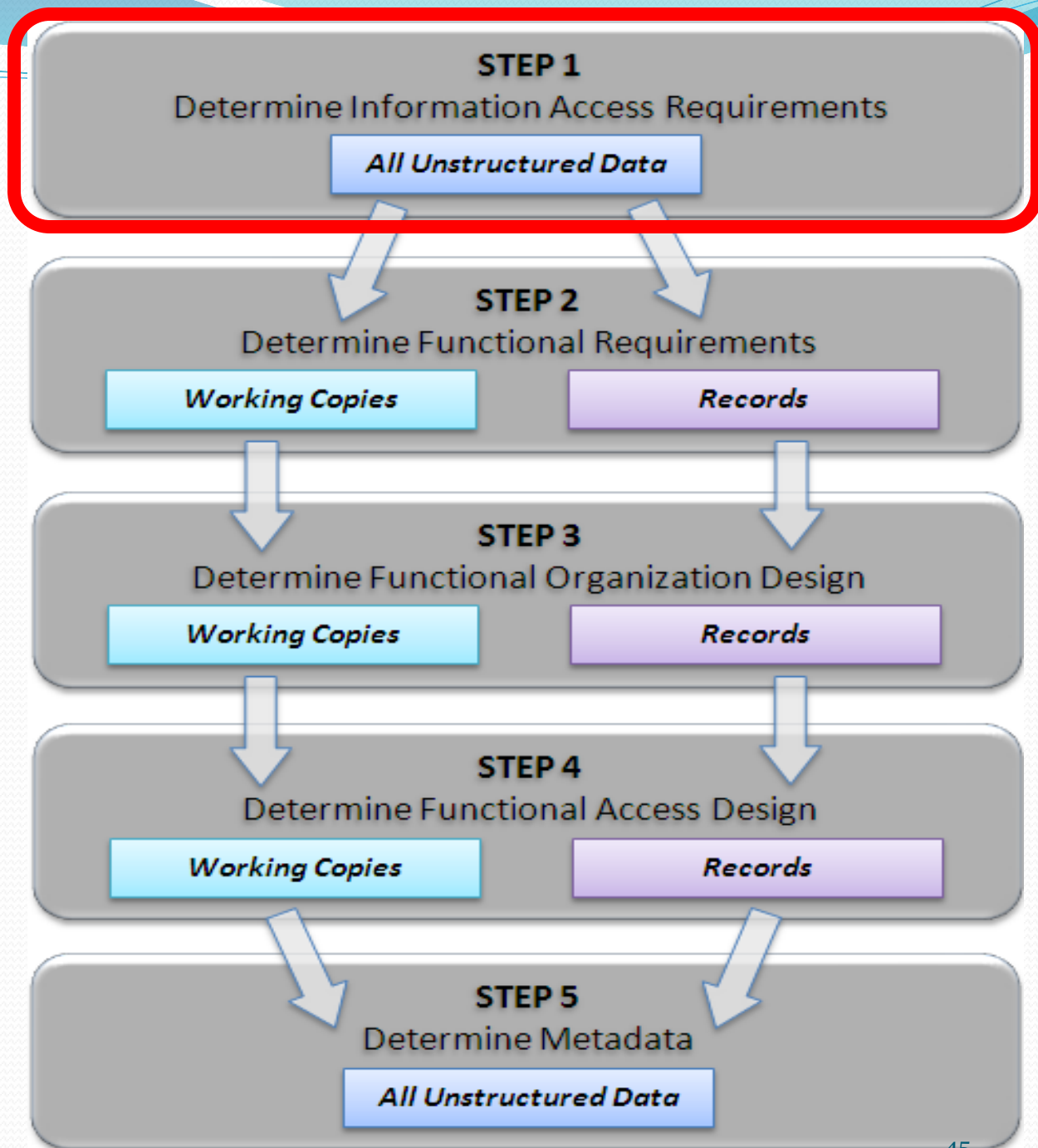
# Unstructured data organization & security strategy

- Each step uses products of the Information Governance Activities



## Step 1 - Determine Information Access Requirements

- Should be completed by each department individually
- Can be done using Classification Levels with an Access Requirement Matrix



# Access Requirement Matrix

- Determining stable access requirements is difficult!
  - Frequent employee turn-over
  - Collaboration between departments and organizations
- Access Requirement Matrix
  - used to identify access needs for Information Types
  - can be completed by asking 2 main questions:
    - *What information needs to be accessed by who?*
    - *For how long?*

# Example (IT Department Matrix)

		Horizontal Access Levels					
		Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
Vertical Access Levels	President						
	Vice President (over this dept.)						
	General Manager (over this dept.)						
	Assistant General Manager (over this dept.)						
	Manager(s) (within this dept.)						
	Assistant Manager (within this dept.)						
	Specialists (within this dept.)						
	Contractors (within this dept.)			010 System Development Documents 011 System Maintenance Documents	011 System Maintenance Documents		

# Example (IT Department Matrix)

		Horizontal Access Levels					
		Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
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	Assistant General Manager (over this dept.)						
	Manager(s) (within this dept.)						
	Assistant Manager (within this dept.)						
	Specialists (within this dept.)						
	Contractors (within this dept.)						

System Maintenance Documents are documents required for the regular upkeep & use of systems (like the PeopleSoft HR system)

**011 System Maintenance Documents**



# Example (IT Department Matrix)

		Horizontal Access Levels					
		Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
Vertical Access Levels	President						
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	General Manager (over this dept.)						
	Assistant General Manager (over this dept.)						
	Manager(s) (within this dept.)						
	Assistant Manager (within this dept.)						
	Specialists (within this dept.)						
	Contractors (within this dept.)						

Example:  
Notes or procedures for troubleshooting PeopleSoft HR system issues.

**011 System Maintenance Documents**

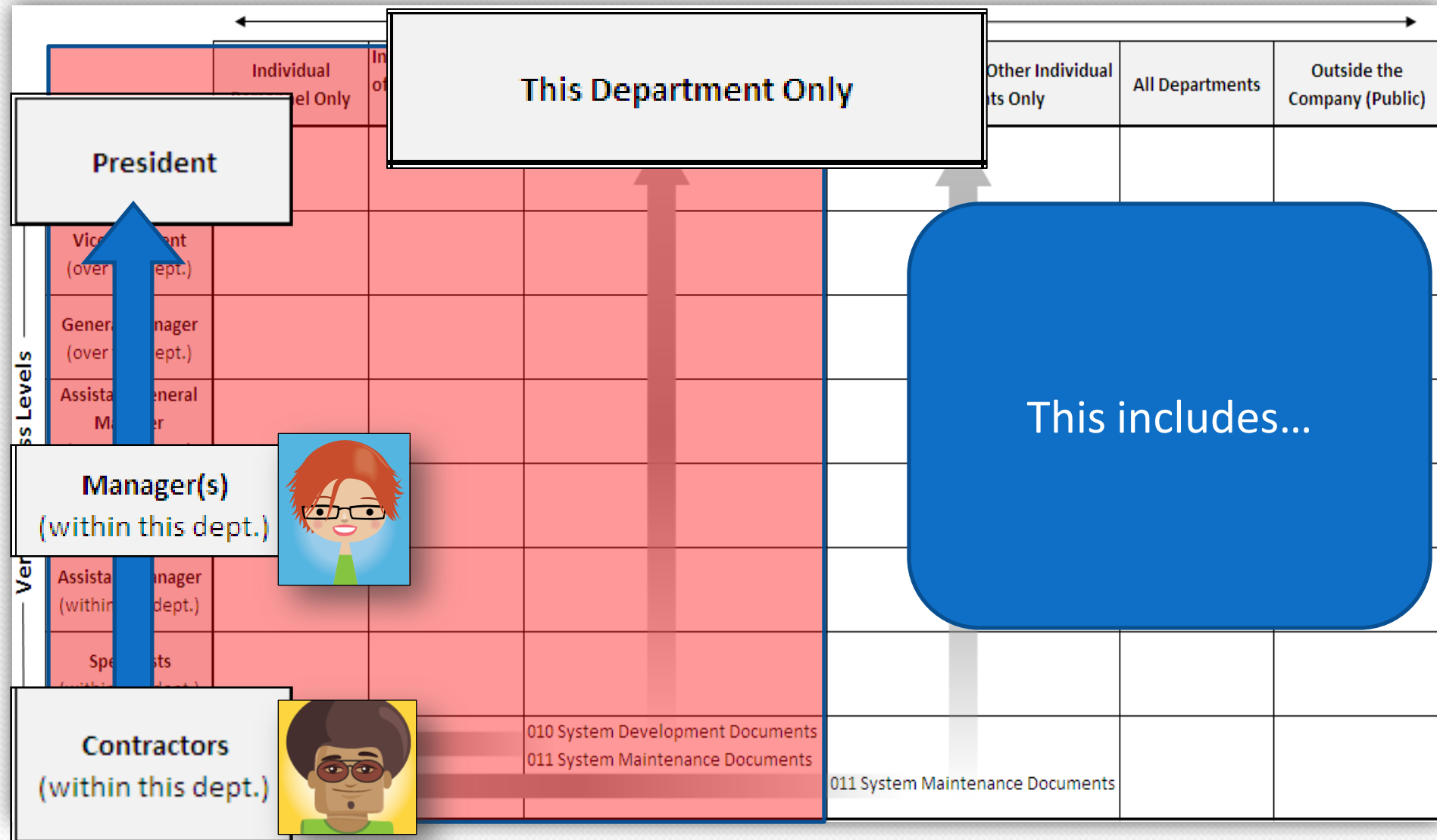
# Example (IT Department Matrix)

Horizontal Access Levels

	Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
President						
Vice President (over this dept.)						
General Manager (over this dept.)						
Assistant General Manager (over this dept.)						
Manager(s) (within this dept.)						
Assistant Manager (within this dept.)						
Specialists (within this dept.)						
Contractors (within this dept.)			010 System Development Documents 011 System Maintenance Documents	011 System Maintenance Documents		

Putting this information type here on the diagram... means that these people can see it.

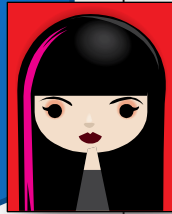
# Example (IT Department Matrix)



# Example (IT Department Matrix)

		Horizontal Access Levels					
		Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
Vertical Access Levels	President						
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	Assistant Manager (within this dept.)						
	Specialists (within this dept.)						
	Contractors (within this dept.)			010 System Development Documents			
			011	<b>011 System Maintenance Documents</b>			

There might also be PeopleSoft HR System Maintenance Documents that people in HR need to see.



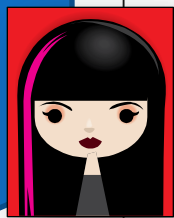
**011 System Maintenance Documents**

# Example (IT Department Matrix)

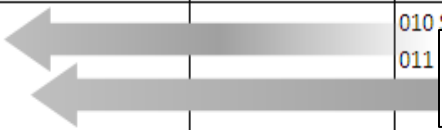
← Horizontal Access Levels →

	Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
President						
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Assistant Manager (within this dept.)						
Specialists (within this dept.)						
Contractors (within this dept.)			010 System Development Documents			
		011	<b>011 System Maintenance Documents</b>			


**Example:**  
 Notes or procedures for how access to the PeopleSoft HR system should be set up.



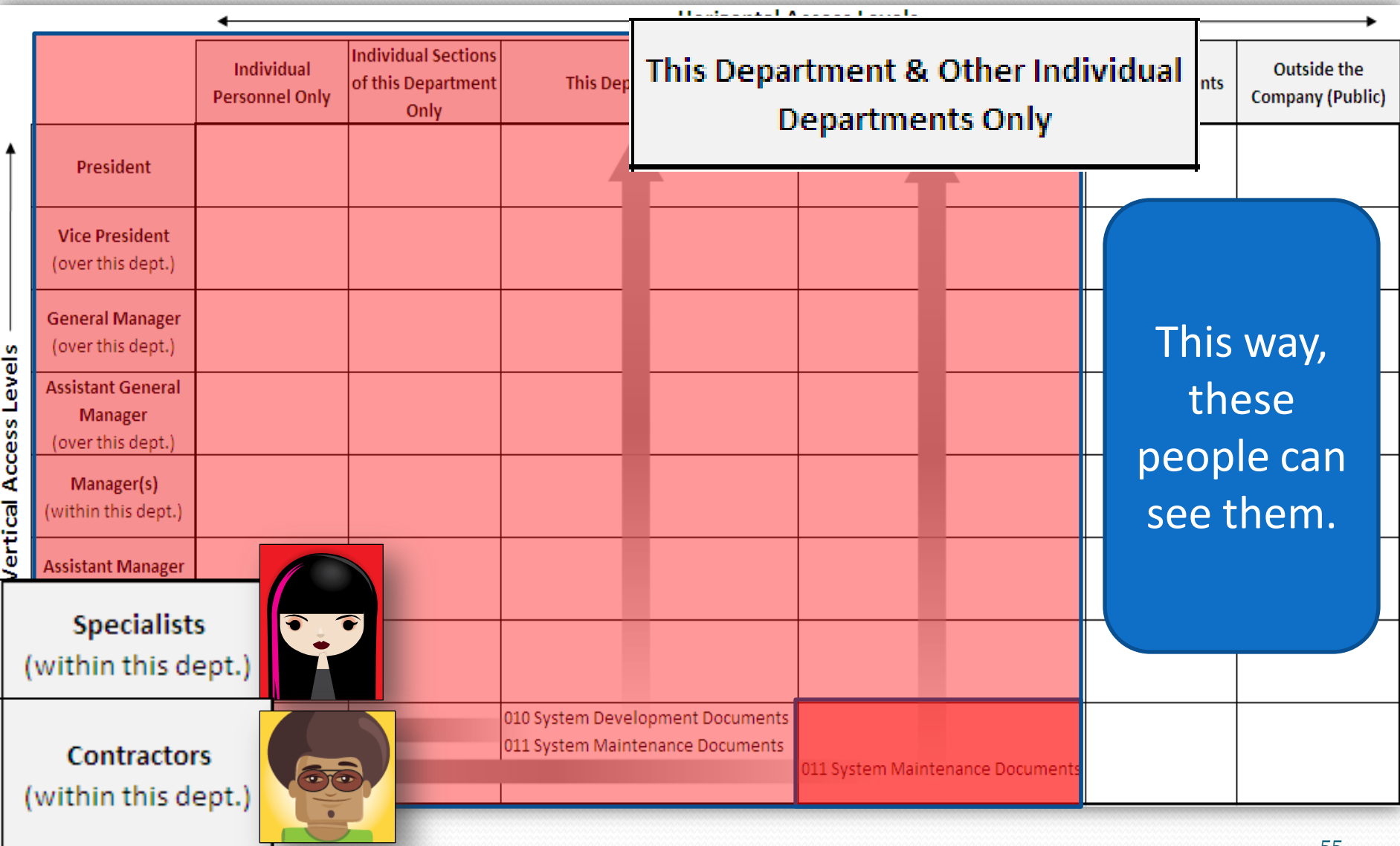
Vertical Access Levels



# Example (IT Department Matrix)

		Horizontal Access Levels									
		Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)				
Vertical Access Levels	President	<div style="background-color: #0070C0; color: white; padding: 20px; border-radius: 20px; display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>These would be placed here.</p>  </div> </div>									
	Vice President (over this dept.)										
	General Manager (over this dept.)										
	Assistant General Manager (over this dept.)										
	Manager(s) (within this dept.)										
	Assistant Manager (within this dept.)										
	Specialists (within this dept.)										
	Contractors (within this dept.)			010 System Development Documents 011 System Maintenance Documents	011 System Maintenance Documents						

# Example (IT Department Matrix)



# Example (Completed IT Matrix)

	Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments
<b>President</b>					
<b>Vice President</b> (over this dept.)					
<b>General Manager</b> (over this dept.)					
<b>Assistant General Manager</b> (over this dept.)					
<b>Manager(s)</b> (within this dept.)				045 Personnel Files 042 Budgets & Forecasts	
<b>Assistant Manager</b> (within this dept.)					
<b>Specialists</b> (within this dept.)				030 Audit Final Reports, Collateral Workpapers 029 System Monitoring, Access, Audit Trails	
<b>Contractors</b> (within this dept.)			012 System Development Documents 034 System Maintenance Documents 006 Form Masters, Templates 010 Policies, Procedures, Manuals 008 Research, Reference Materials 025 Projects, Subject Matter Working Files 021 Calendars, Appointment Books 027 Training Class Educational Materials, Handouts	011 System Maintenance Documents 015 Organizational Charts, Employee Lists 009 Business Cases, Vendor Bids, Proposals, Quotes	006 Form Masters, Templates 010 Policies, Procedures, Manuals 027 Training Class Educational Materials, Handouts



# Classification Levels

- Overlaid to ensure access aligns with company policy
- Example:

*Public*

*Internal Use Only*

*Company Confidential*

# IT Matrix with Classifications Overlaid

	Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
President	<b>COMPANY CONFIDENTIAL</b>					<b>PUBLIC</b>
Vice President (over this dept.)						
General Manager (over this dept.)						
Assistant General Manager (over this dept.)						
Manager(s) (within this dept.)						
Assistant Manager (within this dept.)	<b>INTERNAL USE ONLY</b>					<b>PUBLIC</b>
Specialists (within this dept.)			030 Audit Final Reports, Collateral Workpapers 029 System Monitoring, Access, Audit Trails			
Contractors (within this dept.)		033 System Development Documents 034 System Maintenance Documents 006 Form Masters, Templates 010 Policies, Procedures, Manuals 008 Research, Reference Materials 025 Projects, Subject Matter Working Files 021 Calendars, Appointment Books 027 Training Class Educational Materials, Handouts	034 System Maintenance Documents 015 Organizational Charts, Employee Lists 041 Business Cases, Vendor Bids, Proposals, Quotes	006 Form Masters, Templates 010 Policies, Procedures, Manuals 027 Training Class Educational Materials, Handouts		

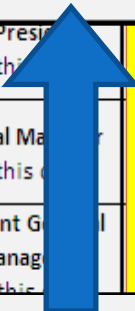
Individual Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Department Only	All Departments	Outside the Company (Public)
-----------------	---	----------------------	--	-----------------	------------------------------

**President**

Vice President  
(over this dept.)

General Manager  
(over this dept.)

Assistant General Manager  
(over this dept.)



**Manager(s)**  
(within this dept.)

**COMPANY CONFIDENTIAL**

045 Personnel Files  
042 Budgets & Forecasts

**INTERNAL USE ONLY**

030 Audit Final Reports, Collateral Workpapers  
029 System Monitoring, Access, Audit Trails

033 System Development Documents  
034 System Maintenance Documents  
006 Form Masters, Templates  
010 Policies, Procedures, Manuals  
008 Research, Reference Materials  
025 Projects, Subject Matter Working Files  
021 Calendars, Appointment Books  
027 Training Class Educational Materials, Handouts

034 System Maintenance Documents  
015 Organizational Charts, Employee Lists  
041 Business Cases, Vendor Bids, Proposals, Quotes

006 Form Masters, Templates  
010 Policies, Procedures, Manuals  
027 Training Class Educational Materials, Handouts

**PUBLIC**

**Contractors**  
(within this dept.)

**Individual Personnel Only**

Individual Sections Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments	Outside the Company (Public)
-------------------------------------	----------------------	---	-----------------	------------------------------

**President**

**COMPANY CONFIDENTIAL**

(over this)

General Manager (over this)

Assistant General Manager (over this)

Manager (within this)

045 Personnel Files  
042 Budgets & Forecasts

Assistant Manager (within this)

**INTERNAL USE ONLY**

Specialist (within this)

030 Audit Final Reports, Collateral Workpapers  
029 System Monitoring, Access, Audit Trails

033 System Development Documents  
034 System Maintenance Documents  
006 Form Masters, Templates  
010 Policies, Procedures, Manuals  
008 Research, Reference Materials  
025 Projects, Subject Matter Working Files  
021 Calendars, Appointment Books  
027 Training Class Educational Materials, Handouts

034 System Maintenance Documents  
015 Organizational Charts, Employee Lists  
041 Business Cases, Vendor Bids, Proposals, Quotes

006 Form Masters, Templates  
010 Policies, Procedures, Manuals  
027 Training Class Educational Materials, Handouts

**PUBLIC**

**Contractors**

(within this dept.)

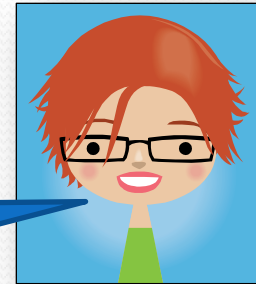
# Temporary Access Requirements

- Example: Temporary project work
- Access should be set up by the project manager with a due date
- Due dates must be respected!
  - When the project is done, access must be removed.

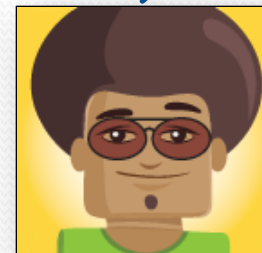
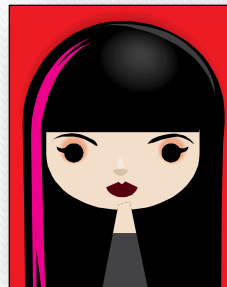
# Example:

*Tammy Technology:*

As the project manager, I will make sure you all have access to the PeopleSoft HR Upgrade folder!



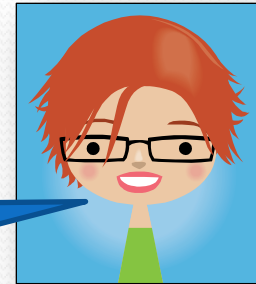
Yay!



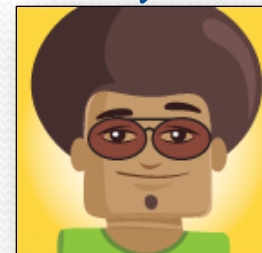
# Example:

*Tammy Technology:*

But after the project,  
access to this folder will be  
removed and records will be  
stored in the correct locations.

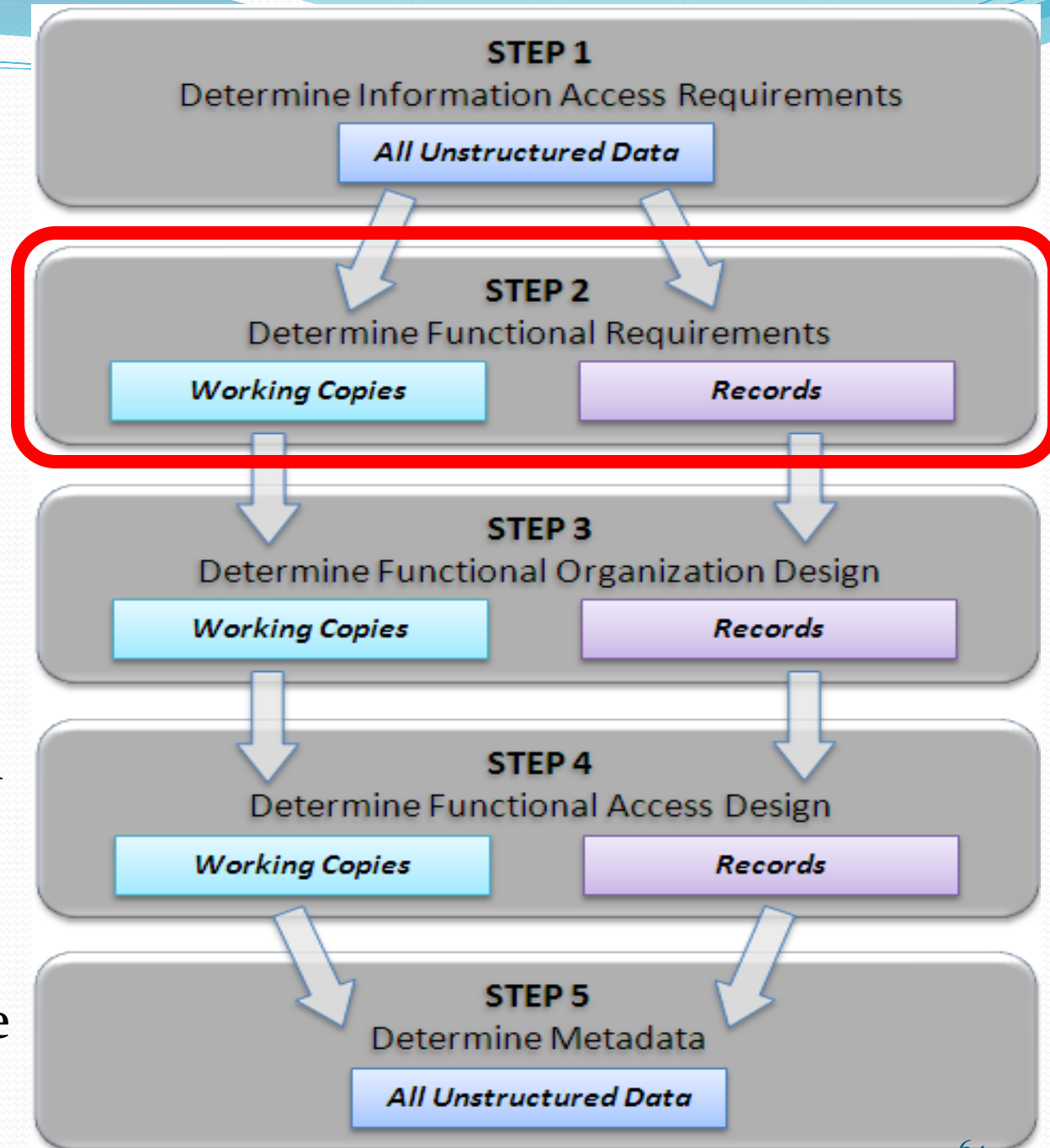


Aw, man!



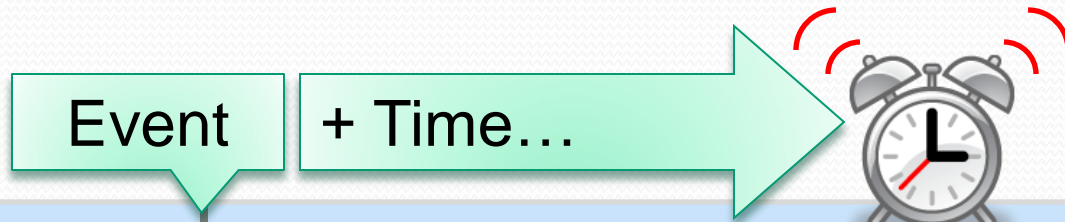
## Step 2 - Determine Functional Requirements

- Outline functional differences between
  - Working copies
  - Records
- Ensures information is managed appropriately at each stage of the information lifecycle





# Information Lifecycle



 Document Creation & Collaboration



Retain Records 

Dispose Records



Dispose Working Copies

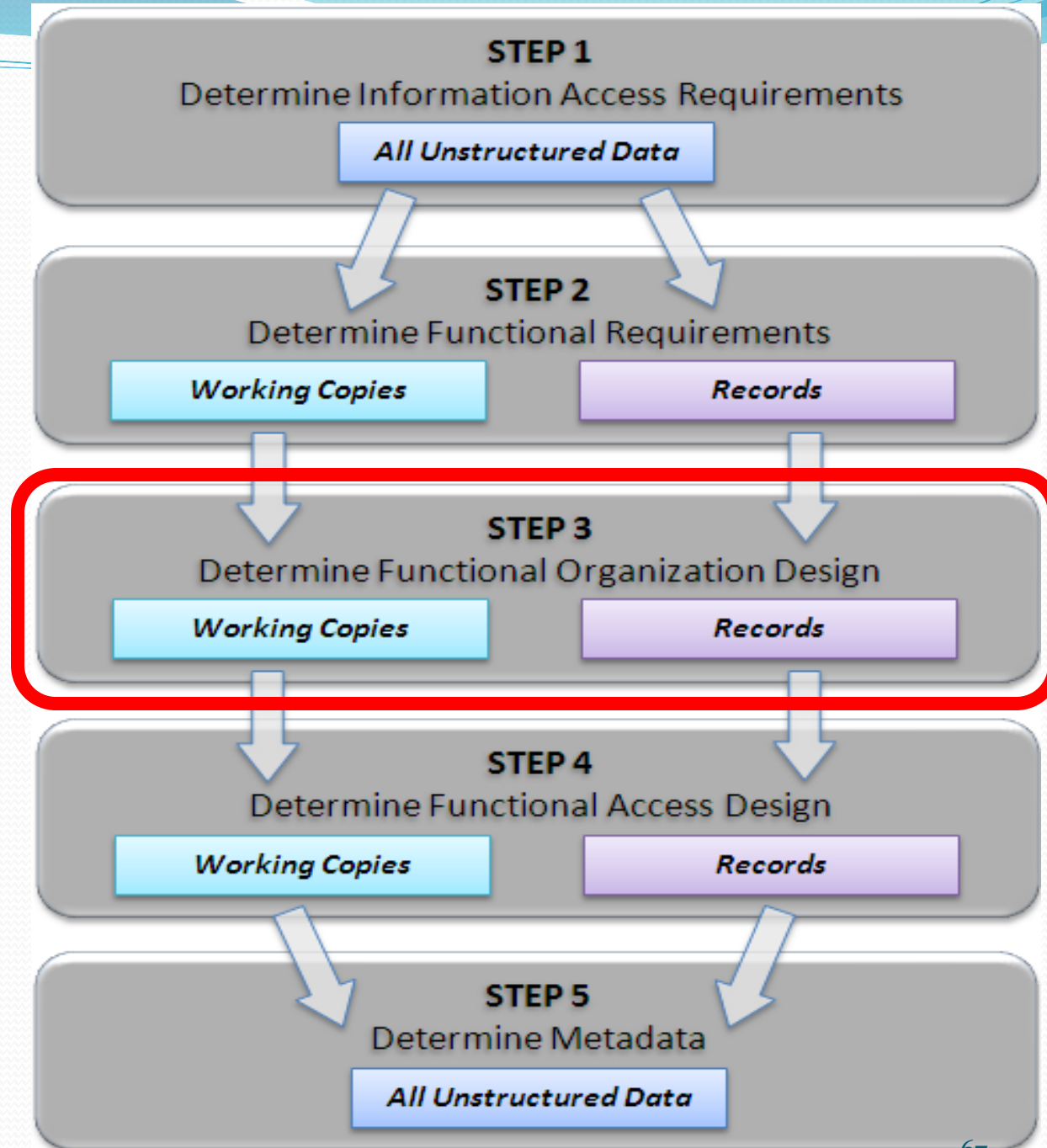


# Functional Requirements

Working Copies	Records
Must be shared	May be shared
Must be modified	<b>MUST NOT BE MODIFIED!!!</b>
Must be frequently accessed	May be accessed occasionally
Should be stored for easy access as work is being completed	Should be stored for easy disposal when retention is up
Can be disposed when no longer needed	Must not be disposed until Retention period ends!

## Step 3 - Determine Functional Organization Design

- How should data be organized?
  - Working Copies?
  - Records?



# Functional Organization Design

## Working Copies

Must be shared

Must be modified

Can be disposed when no longer needed

Must be frequently accessed

Should be stored for easy access as work is being completed

Could be organized according to Department **Business Function**

- Example:

## IT Department *Business Functions:*

- Business Planning
- Operations Maintenance
- System Development

# Functional Organization Design

## Records

May be shared

**MUST NOT BE MODIFIED!!!**

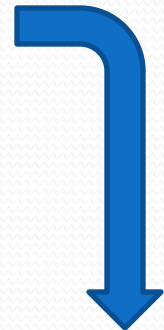
Must not be disposed until  
Retention period ends!

May be accessed occasionally

Should be stored for easy disposal  
when retention is up

Could be organized according to **Record Retention Schedule**, by Information Type

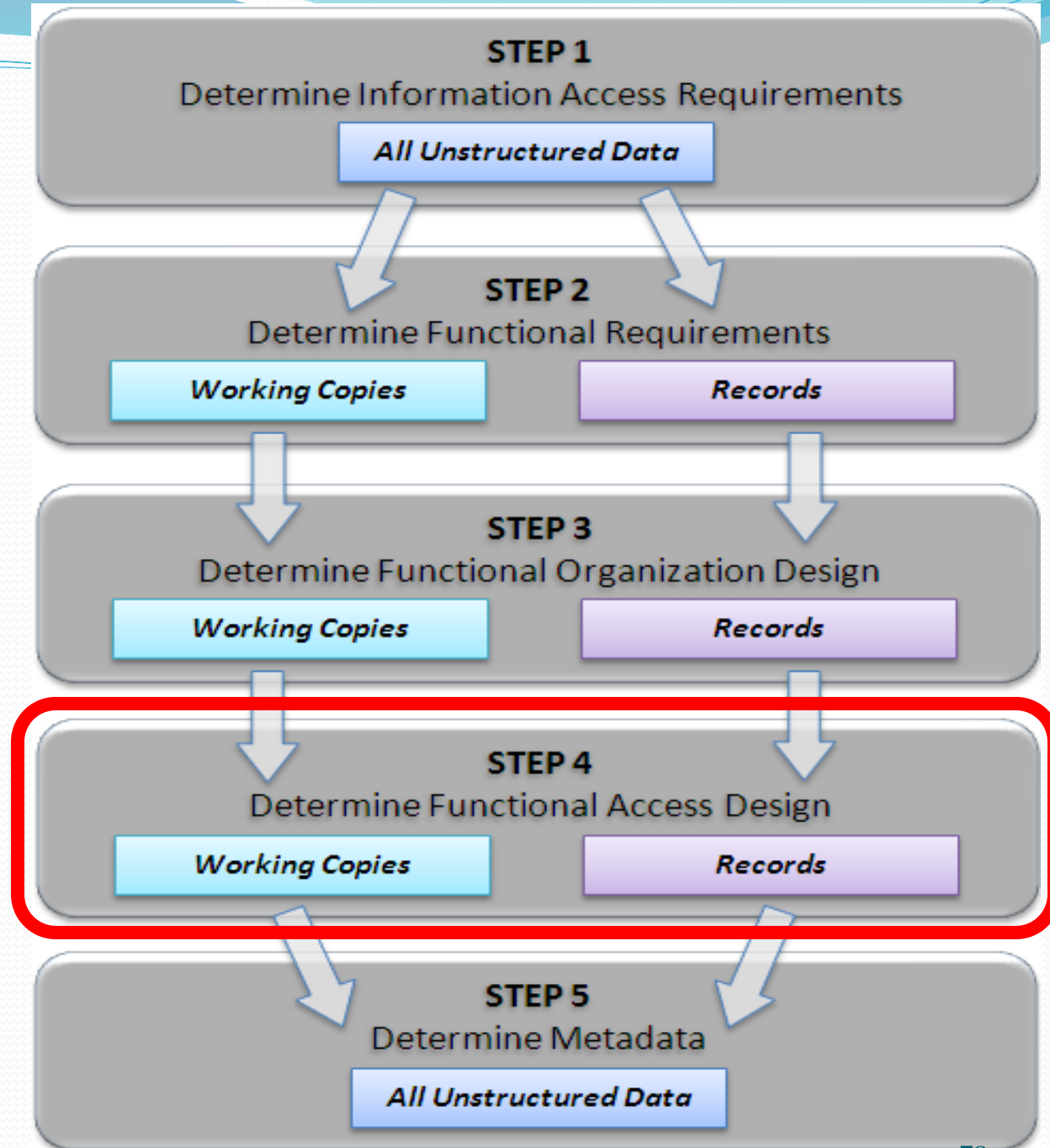
- Example:



<i>ID</i>	<i>Information Type</i>	<i>Retention</i>	<i>Owning Department</i>
<b>Record Function: Human Resources</b>			
<b>Record Class: Benefits Administration</b>			
012	Employee Benefits Management	Employee Termination + 6 yrs	Human Resources
013	Employee Educational Assistance	Employee Termination + 6 yrs	Human Resources

## Step 4 - Determine Functional Access Design

- How should access be set up?
  - For **Records**?
  - For **Working Copies**?



# Functional Access Design

## Working Copies

Must be shared

Must be modified

Can be disposed when no longer needed

Must be frequently accessed

Should be stored for easy access as work is being completed

Access should be set up using...

- Access Requirement Matrix & Classification Levels
- Temporary Access Set-up (for projects, etc)



# Functional Access Design

## Records

May be shared

**MUST NOT BE MODIFIED!!!**

Must not be disposed until  
Retention period ends!

May be accessed occasionally

Should be stored for easy  
disposal when retention is up

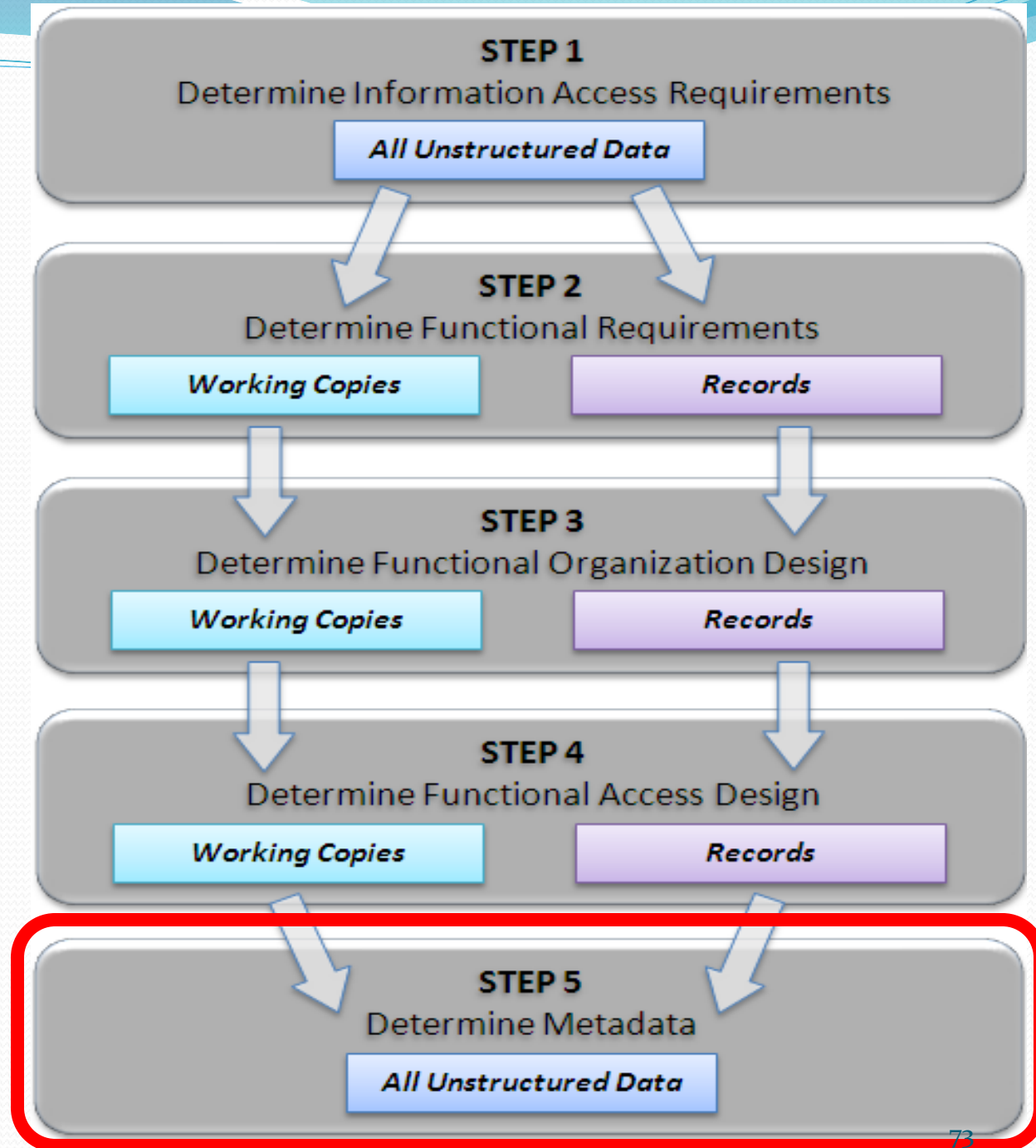
In addition to basic Access Requirements:

- Must be read-only once they become Records
- Only owning department should add records to record folders
- Only appointed Subject Matter Expert should dispose records for the owning department



## Step 5 - Determine Metadata

- Should be consistent across all information
  - Basic metadata
  - Metadata to describe how the data should be handled (functional)



# Metadata

<b>BASIC</b>	<b>FUNCTIONAL (handler instructions)</b>
Creator	Rights
Title	Information Classification
File Type	Information Type
Date Created	Owning Department
Date Modified	Is this a Record?
Modified By	Has the Retention Event Occurred?

# Metadata

BASIC	FUNCTIONAL (handler instructions)
Creator	Rights
Title	Information Classification
File Type	Information Type
Date Created	Owning Department
Date Modified	Is this a record?
Modified By	Has the Retention Event Occurred?

**PROBLEM!**

**Too much metadata =**

**Too many steps to save a document!**

# Metadata

BASIC	FUNCTIONAL (handler instructions)
Creator	Rights
Title	Information Classification
File Type	Information Type
Date Created	Owning Department
Date Modified	Is this a Record?
Modified By	Has the Retention Event Occurred?

**PROBLEM!**

**Solution:** *Automation*

# Opportunities for Automation

Metadata	Proposed Automation Requirements		
	Assign Method	System Data Used to Assign	Action Triggered
Creator	Automated	determined by user's system username	None
Title	Manual	N/A	None
File Type	Automated	determined by application used to create document	None
Date Created	Automated	determined by system time & date information	None

# Opportunities for Automation

Metadata	Proposed Automation Requirements		
	Assign Method	System Data Used to Assign	Action Triggered
Date Modified	Automated	determined by system time & date information	When entered, this should trigger: a. Logging by the system for future retrieval
Modified By	Automated	determined by user's system username	When entered, this should trigger: a. Logging by the system for future retrieval

# Opportunities for Automation

Metadata	Proposed Automation Requirements		
	Assign Method	System Data Used to Assign	Action Triggered
Rights	Automated	Access rights assigned to the folder	If not aligned with Classification Levels: - Error Message
Information Classification Level	Manual - <i>drop down list of Information Classification levels</i>	N/A	If not aligned with Rights: - Error Message

# Opportunities for Automation

## Proposed Automation Requirements

Metadata

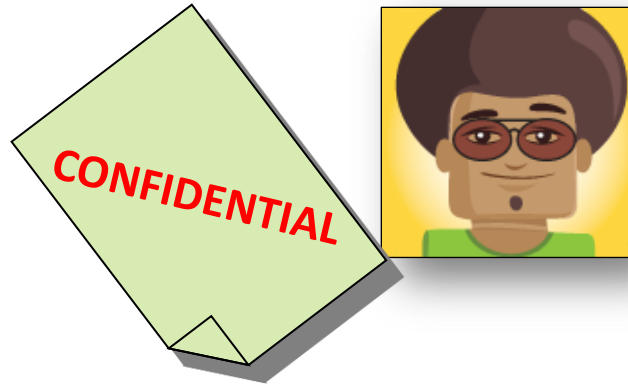
Triggered

### Example:

If Carl Computer tries to save a “Confidential “ document in an “Internal Use Only/Public” folder...

with  
levels:  
e

Rights



Information  
Classification  
Level

with Rights:  
e



# Opportunities for Automation

Proposed Automation Requirements			
Metadata			Triggered
Rights	<p><b>Error Message:</b></p> <p><u>Rights for this folder:</u></p> <ul style="list-style-type: none"><li>- <b>Contractors &amp; above</b></li><li>- <b>All Departments</b></li></ul> <p><u>Classification Levels allowed in this folder:</u></p> <ul style="list-style-type: none"><li>- <b>Internal Use Only</b></li><li>- <b>Public</b></li></ul> <p>Documents with any other classification level must be must be saved in a more secure folder.</p>		with levels: e
Information Classification Level			with Rights: e

# Opportunities for Automation

Metadata	Proposed Automation Requirements		
	Assign Method	System Data Used to Assign	Action Triggered
Information Type	Manual - <i>drop down list of Information Types, based on user's access</i>	user's access (user profile information)	When Information Type selected, this should trigger: - assign "Owning Department" (of Information Type)
Owning Department	Automated	determined by Information Type	None

# Example...

	Individual Personnel Only	Individual Sections of this Department Only	This Department Only	This Department & Other Individual Departments Only	All Departments
President					
Vice President (over this dept.)					
General Manager (over this dept.)					
Assistant General Manager (over this dept.)					
Manager(s) (within this dept.)				045 Personnel Files 042 Budgets & Forecasts	
Assistant Manager (within this dept.)					
Specialists (within this dept.)				030 Audit Final Reports, Collateral Workpapers 029 System Monitoring, Access, Audit Trails	
Contractors (within this dept.)			012 System Development Documents 034 System Maintenance Documents 006 Form Masters, Templates 010 Policies, Procedures, Manuals 008 Research, Reference Materials 025 Projects, Subject Matter Working Files 021 Calendars, Appointment Books 027 Training Class Educational Materials, Handouts	011 System Maintenance Documents 015 Organizational Charts, Employee Lists 009 Business Cases, Vendor Bids, Proposals, Quotes	006 Form Masters, Templates 010 Policies, Procedures, Manuals 027 Training Class Educational Materials, Handouts

**IT contractors can see these Information Types**  
*(these will be available in the drop-down menu)*



Contractors (within this dept.)

012 System Development Documents  
 034 System Maintenance Documents  
 006 Form Masters, Templates  
 010 Policies, Procedures, Manuals  
 008 Research, Reference Materials  
 025 Projects, Subject Matter Working Files  
 021 Calendars, Appointment Books  
 027 Training Class Educational Materials, Handouts

011 System Maintenance Documents  
 015 Organizational Charts, Employee Lists  
 009 Business Cases, Vendor Bids, Proposals, Quotes

006 Form Masters, Templates  
 010 Policies, Procedures, Manuals  
 027 Training Class Educational Materials, Handouts

# Opportunities for Automation

Metadata	Proposed Automation Requirements		
	Assign Method	System Data Used to Assign	Action Triggered
Information Type	Manual - <i>drop down list of Information Types, based on user's access</i>	user's access (user profile information)	When Information Type selected, this should trigger: - assign "Owning Department" (of Information Type)
Owning Department	Automated	determined by Information Type	None

# Example...

**If the IT contractor selects  
 “009 Business Cases, Vendor Bids,  
 Proposals, Quotes,”  
 Owning Department  
 populated will be  
 “Purchasing”  
 since Purchasing owns this  
 Information Type.**



**Contractors**  
 (within this dept.)

	Individual	Individual Sections	Department Only	This Department & Other Individual Departments Only	All Departments
Vi (ov					
Gen (ov					
Ass (o					
(wit				045 Personnel Files 042 Budgets & Forecasts	
Assis (withi					
				030 Audit Final Reports, Collateral Workpapers 029 System Monitoring, Access, Audit Trails	
		012 System Development Documents 034 System Maintenance Documents 006 Form Masters, Templates 010 Policies, Procedures, Manuals 008 Research, Reference Materials 025 Projects, Subject Matter Working Files 021 Calendars, Appointment Books 027 Training Class Educational Materials, Handouts		011 System Maintenance Documents 015 Organizational Charts, Employee Lists <b>009 Business Cases, Vendor Bids, Proposals, Quotes</b>	006 Form Masters, Templates 010 Policies, Procedures, Manuals 027 Training Class Educational Materials, Handouts

# Opportunities for Automation

Metadata	Proposed Automation Requirements		
	Assign Method	System Data Used to Assign	Action Triggered
Record	Manual - <i>check box</i>	N/A	<p>If {User Department &lt;does not equal&gt; Info Type Owning Department}  <b>Then</b> {Error Message}  <b>Else</b> {Send to Electronic Records Vault\Information Type Folder}</p>
Event Occurred	Manual - <i>check box</i> <i>NOTE - Event Occurred should be able to be selected for an entire folder at once</i>	N/A	Start retention period

# Opportunities for Automation



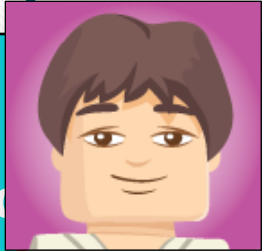
## Example Error Message:

This document has the following information type:  
**[009 Business Cases, Vendor Bids, Proposals, Quotes]**

This information type is owned by **Purchasing**.  
 Only members of the **Purchasing Department** can  
 upload records with this information type.

Meta				ments
				gged
Record				ent > Department} age} tronic ormation Type
Event Occurred	<i>NOTE - Event Occurred should be able to be selected for an entire folder at once</i>	N/A		Start retention period

# Opportunities for Automation



**Else...**

Send file to the correct folder in the  
***Electronic Records Vault***



<b><i>Record Function: Accounting &amp; Finance</i></b>	
<b><i>Record Class: Purchasing, Procurement</i></b>	
008	Purchase Orders, Requisitions (General)
009	Business Cases, Vendor Bids, Proposals, Quotations

Meta

Record

Event Occurred

*NOTE - Event Occurred should be able to be selected for an entire folder at once*

N/A

Start retention period



# Opportunities for Automation

Metadata	Proposed Automation Requirements		
	Assign Method	System Data Used to Assign	Action Triggered
Record	Manual - <i>check box</i>	N/A	<p><b>If</b> {User Department &lt;does not equal&gt; Info Type Owning Department}</p> <p><b>Then</b> {Error Message}</p> <p><b>Else</b> {Send to Electronic Records Vault\Information Type Folder}</p>
Event Occurred	Manual - <i>check box</i> <i>NOTE - Event Occurred should be able to be selected for an entire folder at once</i>	N/A	Start retention period

# Benefits of using this approach

- Unstructured data required for business is identified
- Organizational structures are developed
  - **Working Copies:** by business function & process
  - **Records:** by Record Retention Schedule categories
- Security requirements are established.
- Metadata are established
  - Basic & Functional

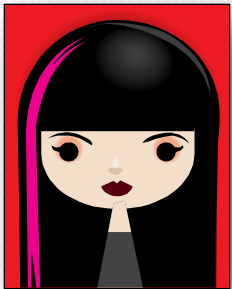
# Next Step...

- Identify and evaluate content management systems that can satisfy these requirements

# Perspectives...

- This is a lot of work! However....
- This example was based on a large company implementation
- It could be scaled down to fit a small company
  - The scope would be determined by the Information Assessment
  - A smaller company would have less information to deal with

# “Questions?”



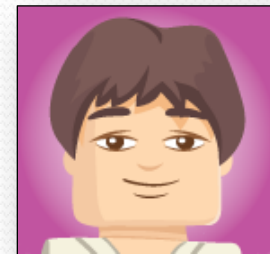
Harriet Human  
Resources



Carl Computer



Tammy Technology



Ralph Requisition