

Process-Based Auditing

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Course Outline and Objectives

- Define products and processes and systems
- Study processes to identify info needs
- Gather information and analyze it
- Present the conclusions in a way that focuses on system issues
- Do it all with folks in your business area
- Have fun and make friends

Eras of Quality

- **Quality Control era (QC)**
 - Define characteristics and inspect to those characteristics (form, fit, function)
- **Quality Assurance era (QA)**
 - Define processes to achieve results and make sure those processes are being followed. (Say what you do and do what you say)
- **Quality Management era (QM)**
 - Develop organization systems to achieve results and provide resources to achieve success.

Quality Management Principles

1. Customer focus
2. Leadership
3. Involvement of people
4. Process approach
5. System approach to management
6. Continual improvement
7. Factual approach to decision making
8. Mutually beneficial supplier relationships



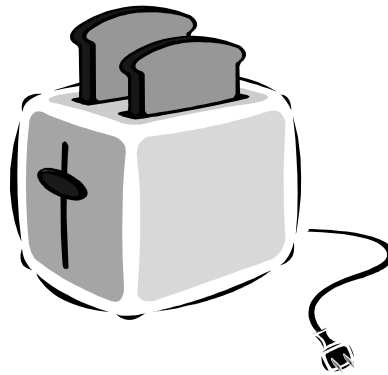
Reference: ISO 9000:2000

Step 1: Define the Product



Four Categories of “Product”

1. Tangible manufactured goods (widgets, cars)



Four Categories of “Product”

2. Tangible processed items (foods, chemicals)



Four Categories of “Product”

3. Software (instructions to computers)



Four Categories of “Product”

4. Service activities



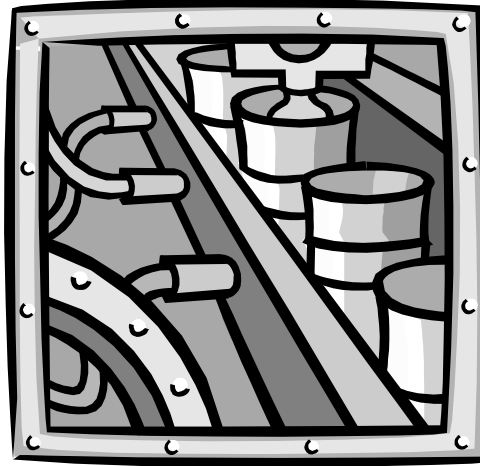
These are the 4 Kinds of Product:

1. Tangible manufactured goods
2. Tangible processed items
3. Software instructions
4. Service activities



Please write down the one or two *major* products your firm makes.

Step 2: How is it Made?



Processes Make Everything!



A change occurs

3 Kinds of Business Processes:

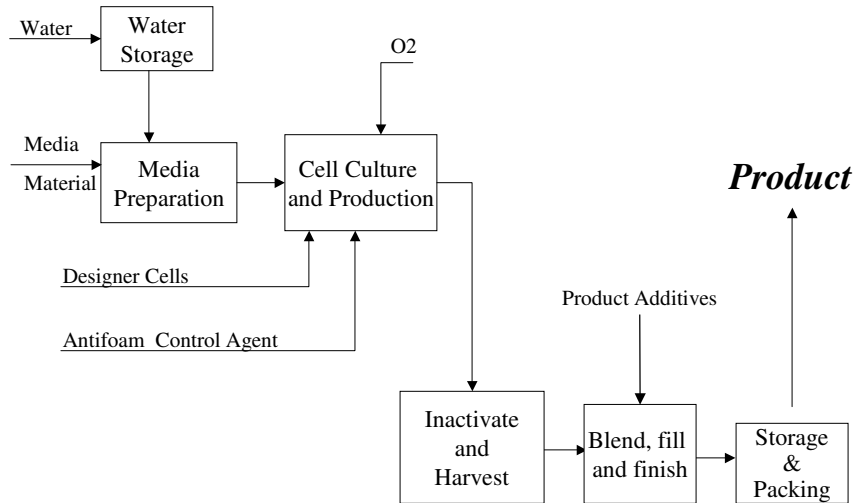
- Factory processes
(also called *product realization* processes)
- Business support processes
(also called *administrative* processes)
- External interface processes
(also called *customer* and *supplier* processes)

Products are the result of processes

Product Realization Processes

- Assembling
- Coating
- Cooking
- De-icing
- Fastening
- Growing
- Inspecting
- Moving
- Operating
- Quilting
- Riding
- Sequencing
- Serving
- Teaching
- Testing
- Washing

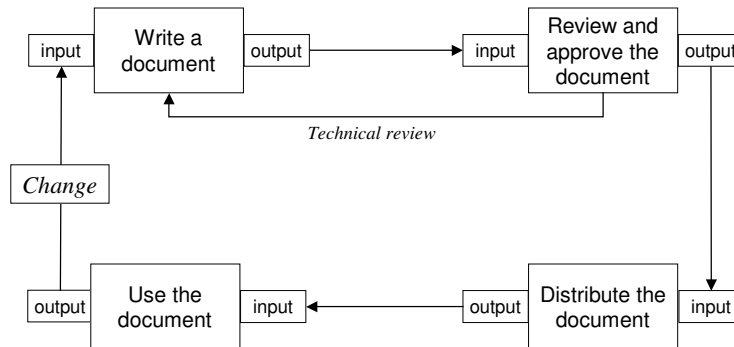
Making Flu Vaccine



Business Support Processes

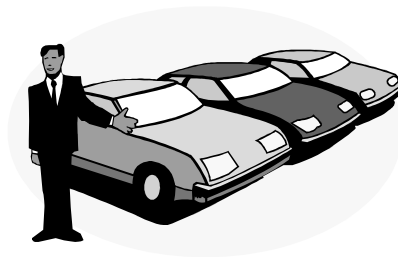
- They all support production
- Typical functional departments:
 - Maintenance
 - Quality, Environment, Safety, Security
 - Accounting, Information Technology
 - Purchasing, Human Resources, Training
 - Production Planning
 - Design, Development, Engineering

Document Control Processes

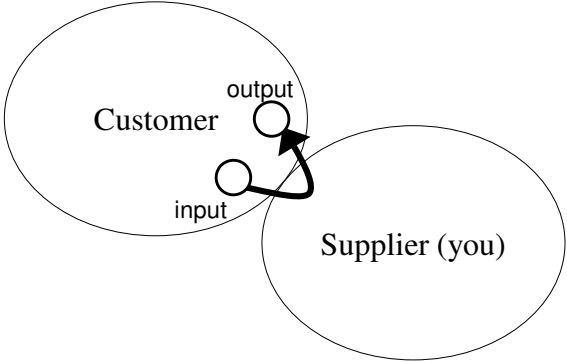


External Interface Processes

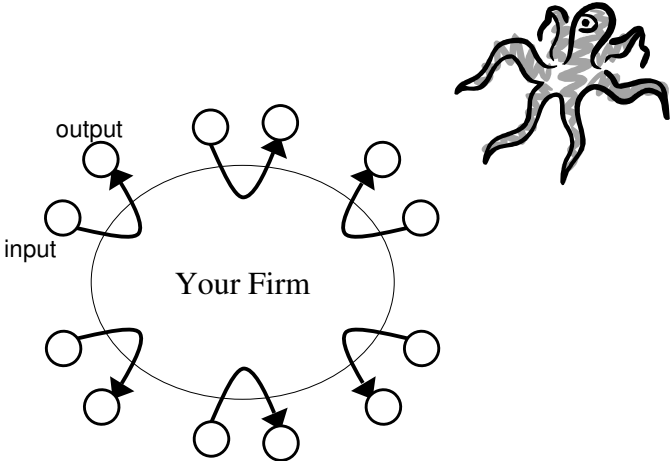
- Also called customer oriented processes (cops) and supplier oriented processes (sops)
- Typical departments:
 - Marketing
 - Sales
 - Customer support
 - Shipping
 - Design requirements
 - Purchasing



Customer Oriented Processes



Octopus Model



Processes in Your Firm?

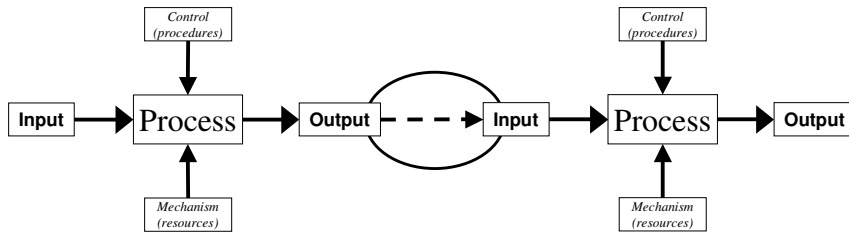
Please write down two:

- *Product Realization* processes
- *Business Support* processes
- *External Interface* processes

So, What is a System?

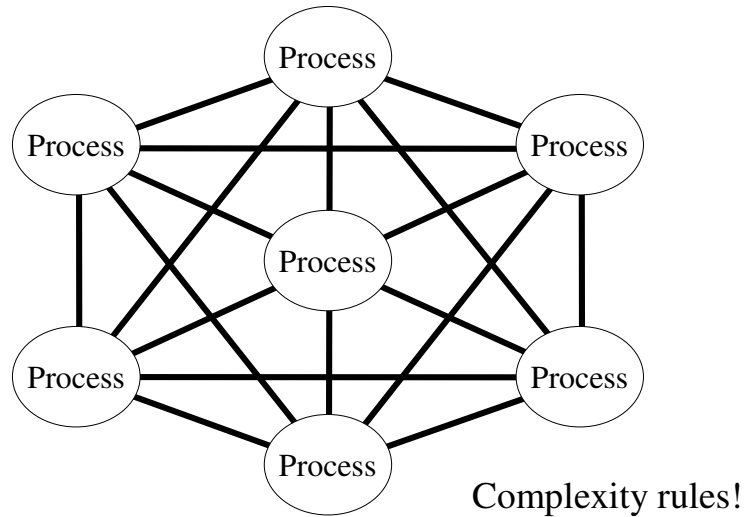


Systems are Linked Processes



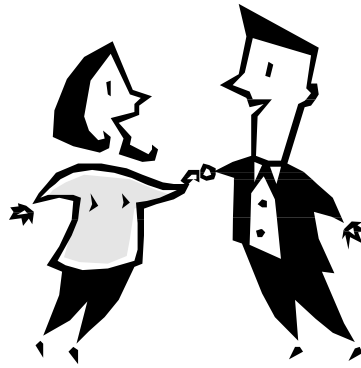
System: Processes working together to achieve a common goal.

Systems are Linked Processes



Introductions

- Who are you and what does your company make?



Break!



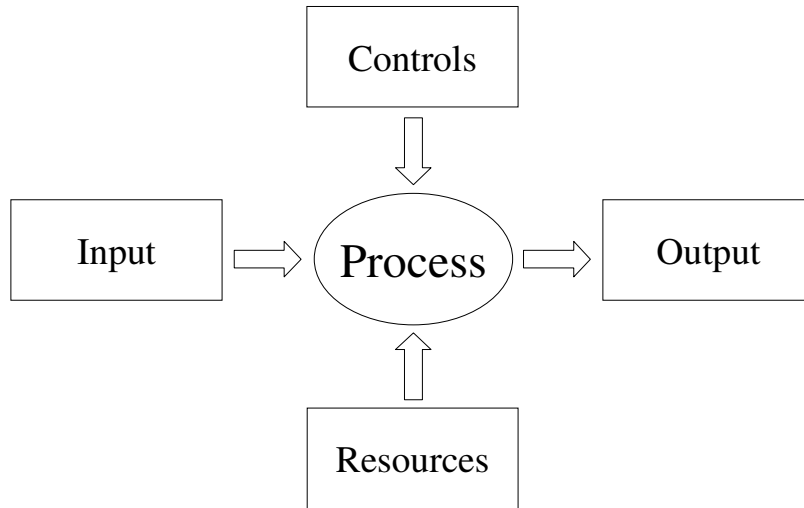
Workshop on Process Flow

- *Please choose a product and flowchart its production.*
 - *Maximum of eight boxes*
 - *Maximum of four words in a box*
 - *One of those words must be a verb*
 - *Identify a process owner below each box*
- *Write on chart paper*
- *20 minutes for this part*

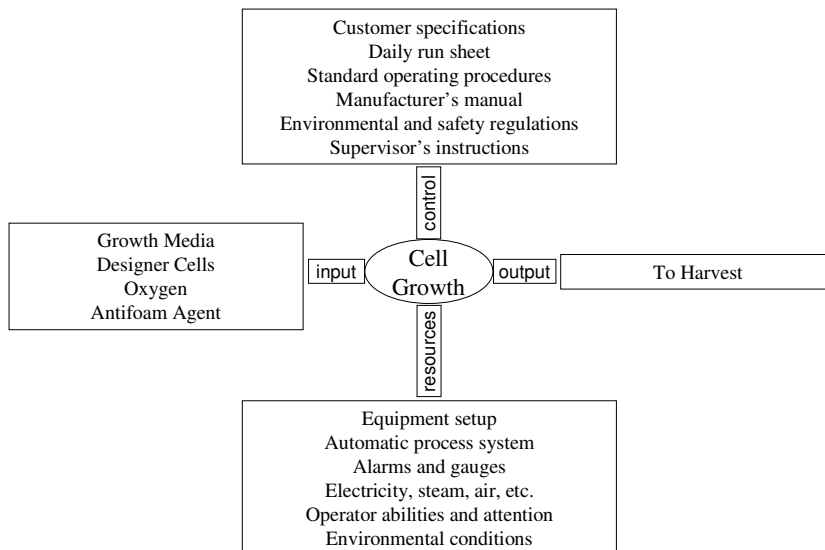
Step 3: Understand Processes



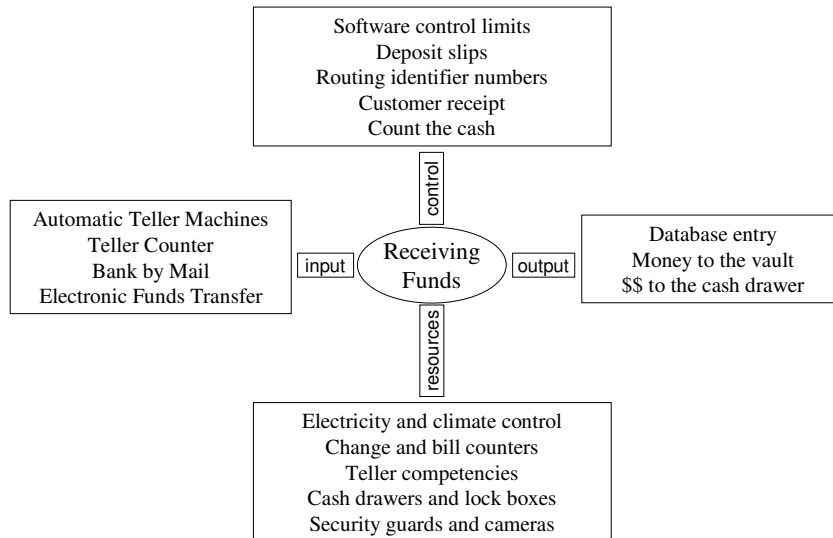
Universal Process Model



Flu Vaccine



Receiving Funds at a Bank

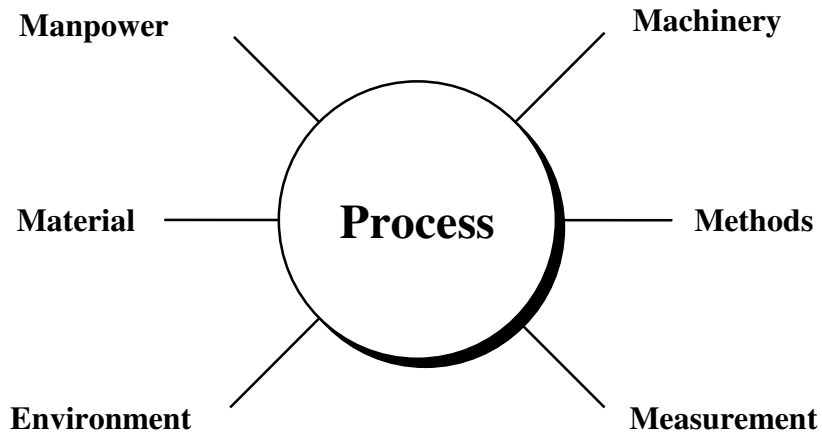


Is There a Better Way?

- Simple four-box approach requires significant concentration
- What about tapping previous work on how processes behave? (Such as Ishikawa)



Universal Process Affecters



Universal Process Affecters

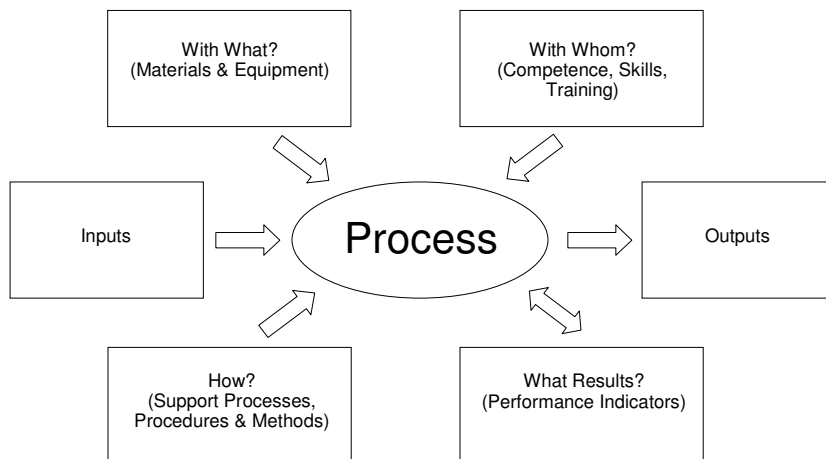
- **Methods:** These are the instructions we provide for the task. Often called *documents*.
- **Material:** These are the things used by the process.
- **Manpower:** (and womanpower!) These are the human competencies needed.
- **Measurement:** These are the data taken of the process and their use.
- **Machinery:** This is the equipment used to perform the action.
- **Environment:** These are the outside influences on the process.

Whoa! Now It's Too Much!

How about something halfway?



Turtle Diagram



Source: AIAG 2003

Workshop: Do the Turtle

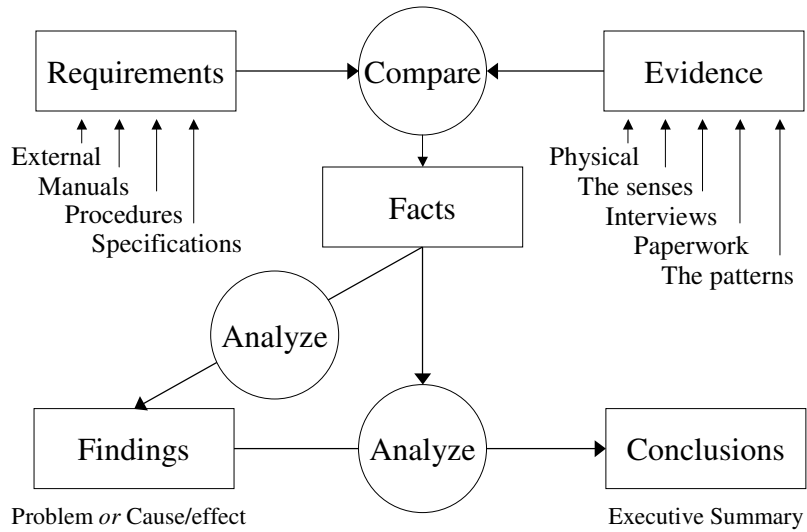
- *Each person in the group pick a process from the flowchart prepared earlier*
- *Do a turtle diagram for your process*
- *See if the outputs and inputs match*
- *20 minutes for this part*



Break!

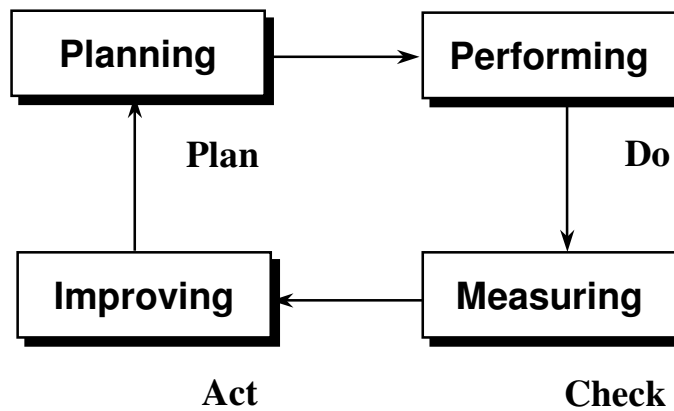


General Model for Auditing

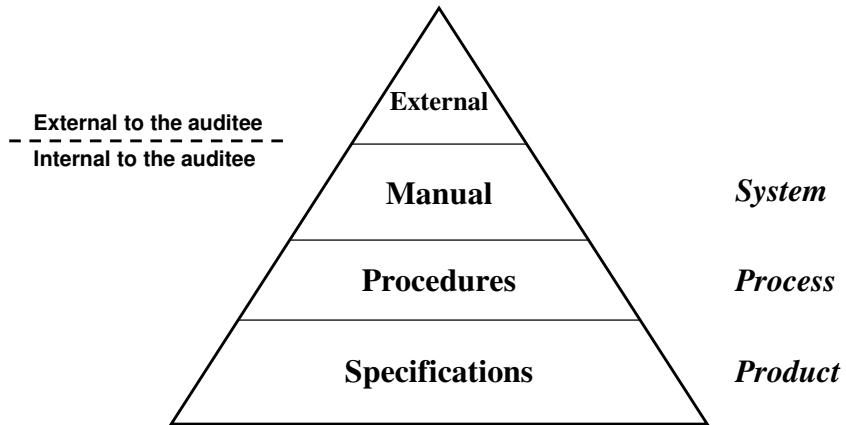


Requirements are the *Plans*

Left side of the audit model



Document Levels



External Sources of Documents

External - from outside

- National regulations
- International regulations (export)
- National and international standards
- Industry codes and standards
- Package labels
- Corporate policies
- Customer requirements

Internal Sources of Documents

Internal - within the firm

- Functional manuals (quality, research, production, accounting, etc.)
- Departmental procedures (admin.)
- Standard operating procedures
- Production planning sheets
- Inspection plans
- Software settings

Documents

Forms of documents include:

- Paper versions of manuals and procedures
- Computer files (word, database, drawing)
- Hyperlink documents (html, xml, .net)
- Pictures and samples
- Informal (stickies, marks, pocket notes)
- Vertical: all controls in one unit
- Horizontal: one control in all units

Objective Evidence

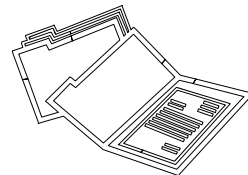
- Physical
- Senses
- Paperwork
- Interviews
- Patterns

Right side of the audit model



Work Papers are Tools to Define Information Needs

- Checklists, flowcharts, procedures
- Prepared by individual auditors
- They bridge the left and right sides of the audit model
- They provide structure, assure coverage, and capture information



Objective Evidence Needs

- Should be drawn from many different documents and levels (tiers)
- Should be single issue (one fact per question)
- Should be objective (no “fuzzy” words)
- Should state the source of the requirement

Checklist vs. Interview

- Checklists define the nuggets you need in order to write a report. They are shopping lists of specific facts you want to get.
- Interviews are one of the five ways you use to get those nuggets. They are open-ended and include *who, what, where, when, why, how, and please show me.*

Step 4: Define Information Needs

With What?
(Materials & Equipment)

Computer terminal
Receipt slips
Check reader

- Is software release 20.56 in use?
(Approved vendor release)
- Are passwords changed weekly?
(Security Inst. 25)
- Are 250 receipt slips available at all times?
(Customer Service Std. 12)
- Were the last 20 checks run through the verification machine? (Teller SOP 2)

Step 4: Define Information Needs

What Results?
(Performance Indicators)

Cash drawer balance
Night audit

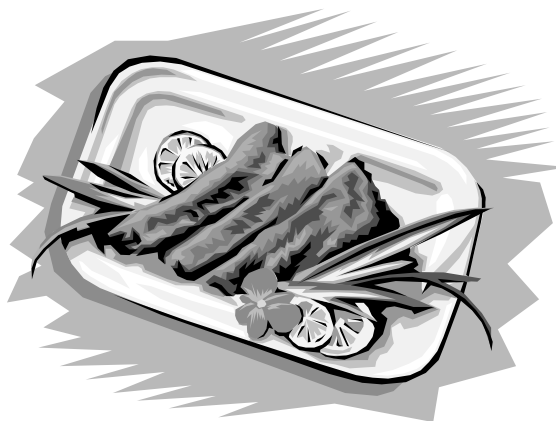
- Are cash drawer balance checks performed four times daily? (SOP 6)
- Are night audits performed after each business day?
(Corp. Policy 17)
- Are system checks evaluated by supervisors? (Corp. Policy 18)
- Have quality performance goals been established and communicated to staff? (HR Method 034, part 6)

Workshop: Objective Evidence

- *Start with the turtle diagram you prepared earlier*
- *Define at least three objective evidence items for each box*
 - *Try to choose a different document level (external or internal) for each question*
- *After 15 minutes, share your questions with your group. Challenge each other.*
- *30 minutes total*

Avoid “you” and fuzzy words. Focus on the nuggets!

Lunch



Progress So Far

- Step 1: Define the products
- Step 2: Define the processes by flowcharting
- Step 3: Study the processes through turtle diagrams
- Step 4: Define information needs (objective evidence)



Step 5: Gather Objective Evidence

- This is the fieldwork and starts after the opening meeting.
- You need to walk the processes (*tracing*) and interview the people performing the tasks. (You go to them.)



Gather Data, for example:

- Computer network was down for a total of 25 minutes during the month of July.
- Tellers backed up data for the seven shift changes examined.
- Hill Street branch experienced 3 cash machine paper receipt jams in June.
- Generic deposit slips were available at all teller stations.

Gather Data, for example:

- 6 of 48 overhead lamps were non-functional at the Charles Circle branch on Friday.
- All tellers are examined for math and communication skills prior to hire.
- Backup server was loaded with out of date data files on July 12.
- Bill sorting machine malfunctioned on July 3 and again on July 9.

Workshop: Gather Data

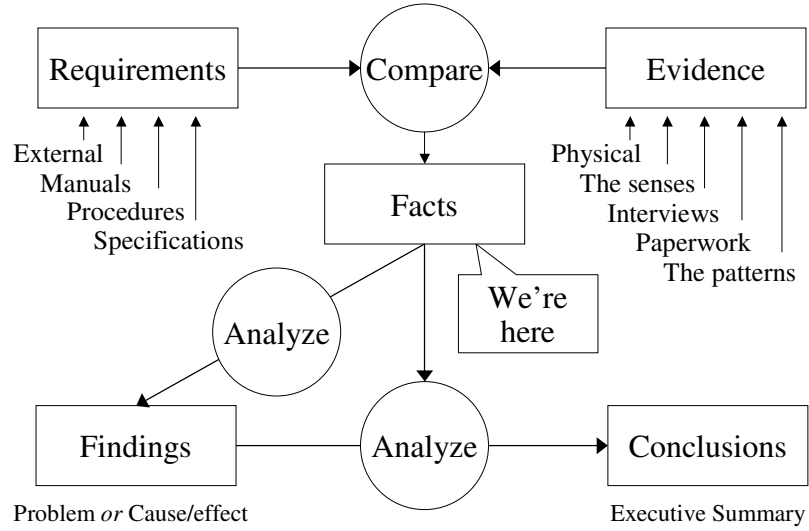
- *Going around the group, use the interview to explore one of your questions and allow the group to provide made-up answers.*
 - *Use your checklist questions developed earlier*
 - *4 minutes per interview, then shift*
 - *Provide both compliant and non-compliant answers*
- *Record all answers on the chart paper after one round. Repeat if time permits.*
 - *Attempt to capture at least 6 conforming and 6 nonconforming facts*
- *60 minutes total*

No fuzzy or general statements, please. Just the facts (nuggets).

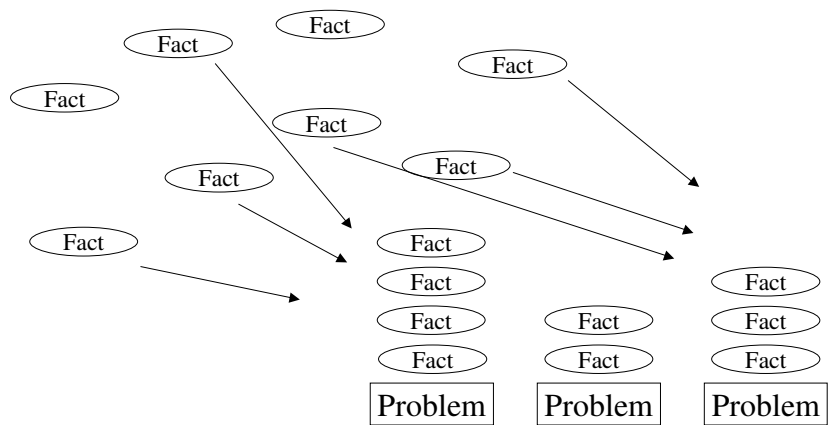
Break



General Model for Auditing



Step 6: Analyze Data by Sorting



Data Chunking

Sorting Our Bank Data

Equipment maintenance

- Network down
- Backup server data
- Bill sorting machine
- Doors, locks, and keys
- Cash machine jams
- False security alarm

Teller competencies

- Confusing debit and credit
- Cash drawer daily audit

No pattern

- Key-in entry mistake
- Coins falling out of rabbit

This Becomes a *Finding*

Turn the piles upside down:

- Statement of the system control problem
 - Bad fact
 - Bad fact
 - Bad fact
 - Bad fact



Step 7: Present Conclusions

Equipment is not routinely kept in proper working condition.

- Computer network was down for a total of 25 minutes during the month of July.
- Backup server was loaded with out of date data files on July 12.
- Hill Street branch experienced 3 cash machine paper receipt jams in June.
- Bill sorting machine malfunctioned on July 3 and again on July 9.
- Three branches experienced entry door lock jamming this year. One resulted in a key breaking.
- Oak Lawn branch experienced a false security alarm on July 20. Police responded.

This is called a *finding sheet*

Workshop: Write a Finding

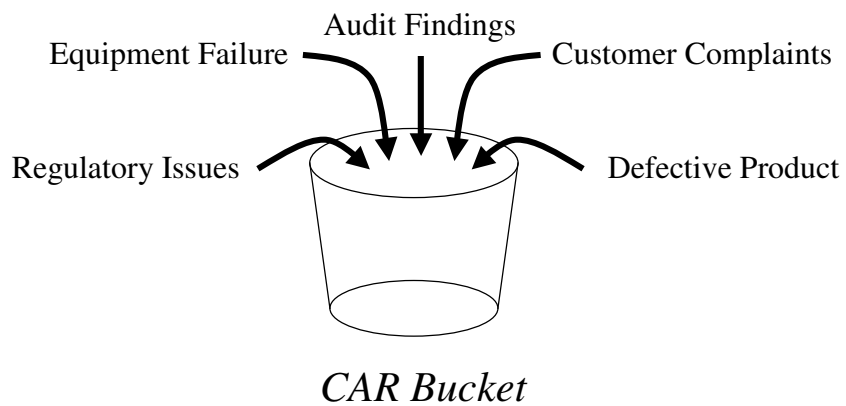
- *Sort your data sheet(s) by problem area.*
- *Identify the most important problem.*
- *Write the finding on a new sheet of paper.*
 - *Important problem*
 - *Supporting objective evidence*
- *20 minutes for this part.*

Bonus points if you avoid the “easy” ones of inadequate training and not following SOPs!

Break!



Corrective Action System



Corrective Action Request

Issued to: The auditee	CAR No. 15
Statement of the problem: (Enter the Finding Statement)	
Short-term (remedial) actions taken:	
Underlying causes of the problem:	
Long-term (corrective) action to be taken:	
Milestones and responsibilities:	
Expected completion date:	
Manager's signature:	Date:
Follow-up and verification actions	

Remedial Action for Symptoms

Short-term actions

- Rework
- Reject No Spec change
- Repair Spec Change
- Release
 - Re-grade
 - Recycle

Corrective Action for Disease

- Identify problems for correcting
 - You have already done that
- Determine underlying (root) causes
 - Will take more than a day and more than one person
- Fix the underlying (root) causes
 - Will require system changes (equipment, processes, people skills, \$\$)
 - Will take at least a month, usually longer
- Verify the fix really worked
 - Will take a year's worth of data

Workshop: Respond to a CAR

- *Trade finding sheets*
- *Prepare a response, including*
 - *Remedial action for each bullet*
 - *Root cause and action plan for problem*
- *Be prepared to present in 30 minutes*

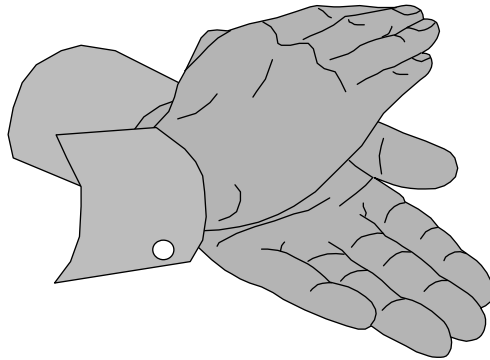
The Process Approach to Audits

- Step 1: Define the products
- Step 2: Define the processes by flowcharting
- Step 3: Study the processes through turtle diagrams
- Step 4: Develop objective evidence needs
- Step 5: Gather objective evidence (fieldwork)
- Step 6: Analyze data to form finding sheets
- Step 7: Report your conclusions
- Step 8: Address problems through remedial and corrective actions

Conclusion

- We must first understand the (business) processes to be audited and how they relate to the objectives of the enterprise.
- We then gather field data on how those processes are being controlled.
- We present conclusions in a way that shows the way strengths and weaknesses affect the business.

Thank you for your kind attention!



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