



Making the SMS Business Case

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SMS Implementation Challenges

- **How do we get Continued Management Participation?**
- **Who puts the SMS Plan Together?**
- **How much time is needed?**
- **Where will the time come from?**
- **Who has the expertise?**

SMS Implementation Challenges

- **What SMS guidance is available?**
- **Is the guidance applicable our operations?**
- **What are Safety Goals?**
- **What are Safety Objectives?**
- **What is Performance Measurement?**
- **What kind of SMS documentation within our organization?**

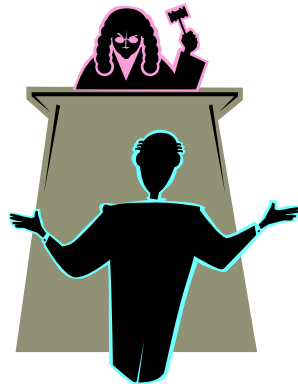
SMS Implementation Challenges

- **Establishing realistic deliverables**
- **Getting the SMS message to staff members**
- **Possible conflict with “new method” vs “old way”**
- **Amount of Reference Material to be reviewed**
- **What should a plan look like?**

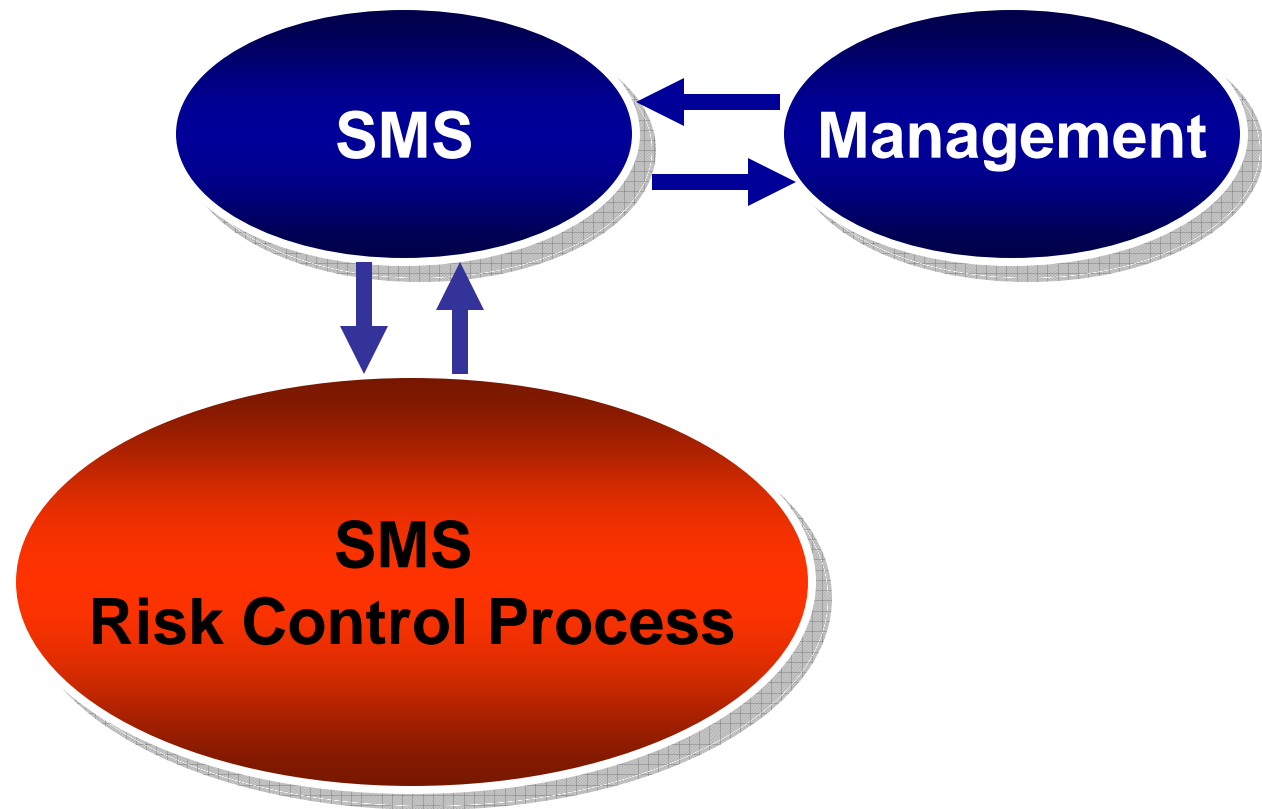
Motivation for Safety



?



Management and Controlling Risk





Why you have to make the SMS Business Case to Senior Managers

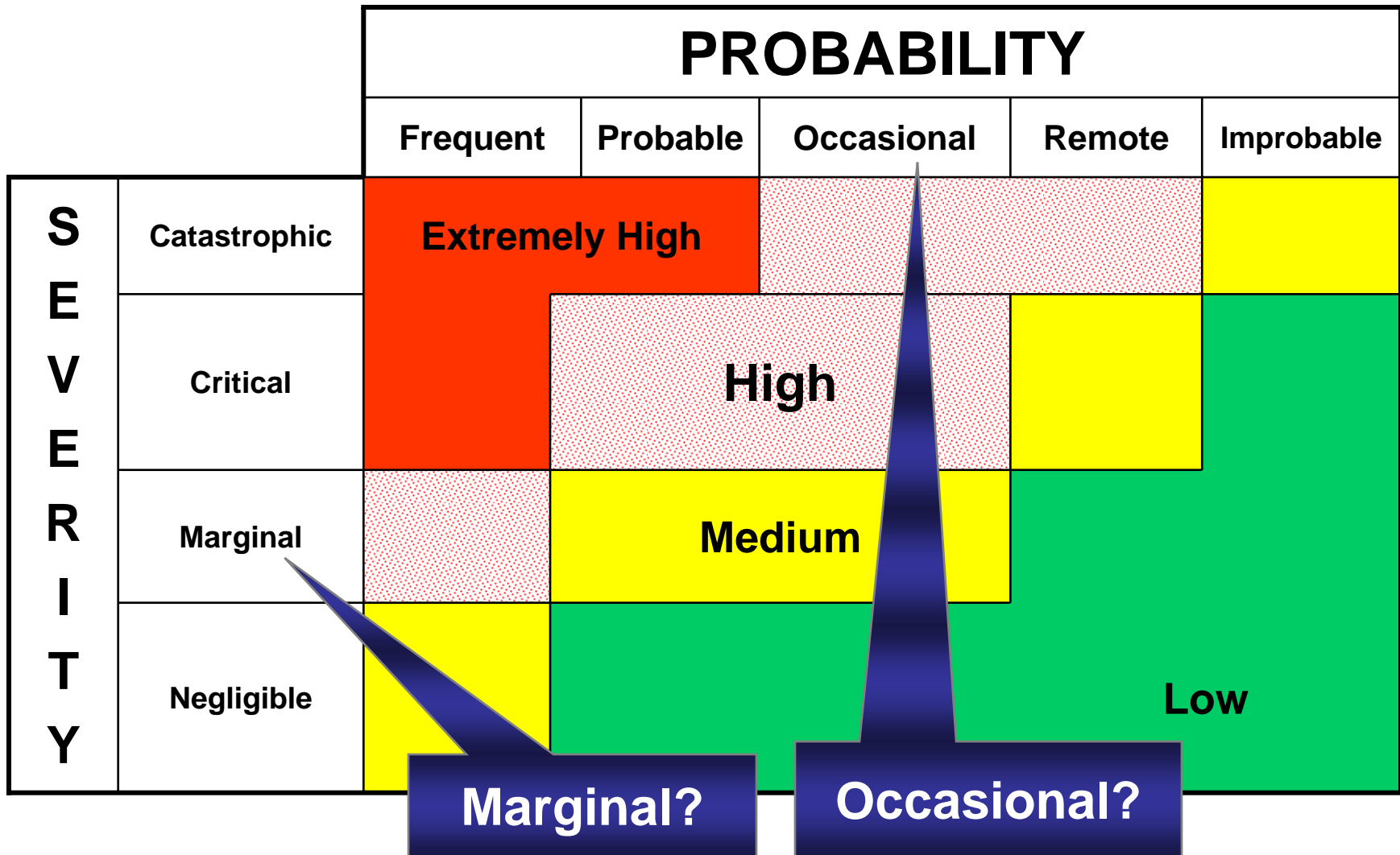
They own the checkbook

Management

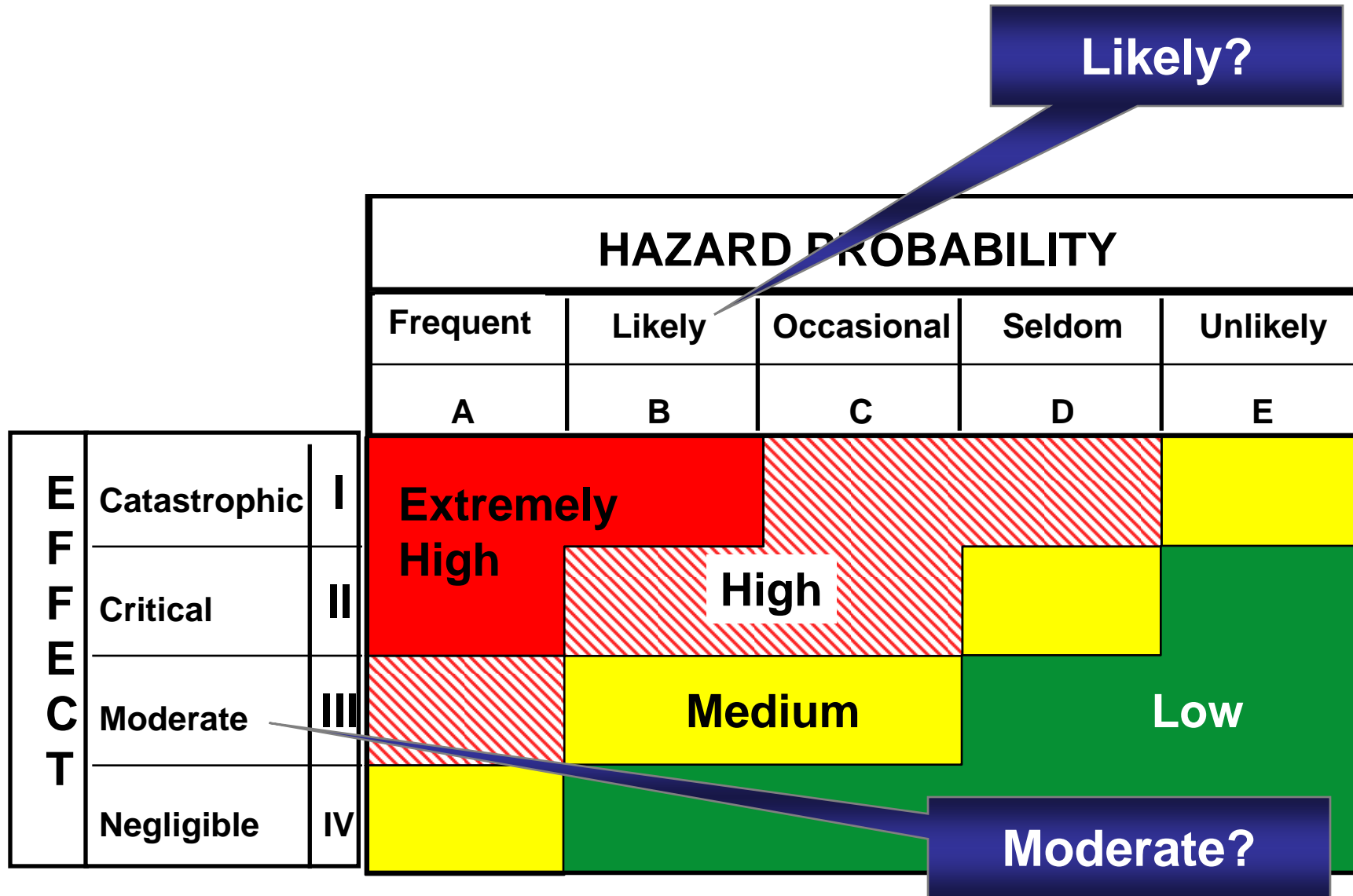
You get 15 minutes with the top manager – what do you say?



Traditional Safety Risk Matrix



Traditional Risk Assessment Matrix



Risk Matrix (With Criteria for Action)

Severity \ Likelihood	No Safety Effect 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A	Green	Yellow	Red	Red	Red
Probable B	Green	Yellow	Red	Red	Red
Remote C	Green	Green	Yellow	Red	Red
Extremely Remote D	Green	Green	Green	Yellow	Red
Extremely Improbable E	Green	Green	Green	Green	Yellow

• **High Risk: Unacceptable Risk**

- Cannot be implemented unless hazards are mitigated
- Tracking and management required

• **Medium Risk: Acceptable Risk**

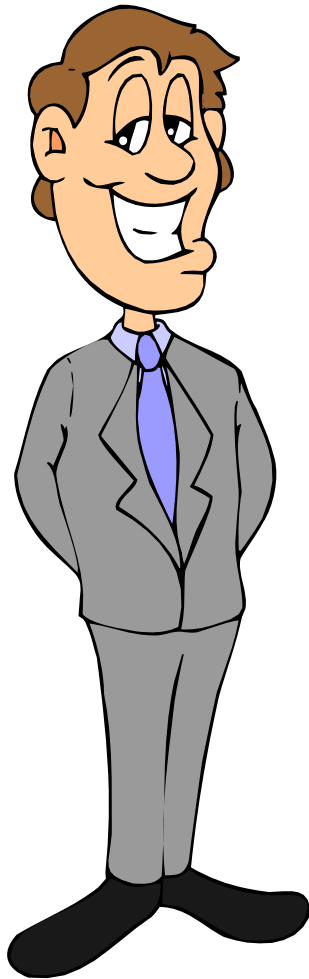
- Acceptable
- Proposal may be implemented but tracking and management are required

• **Low Risk: Target**

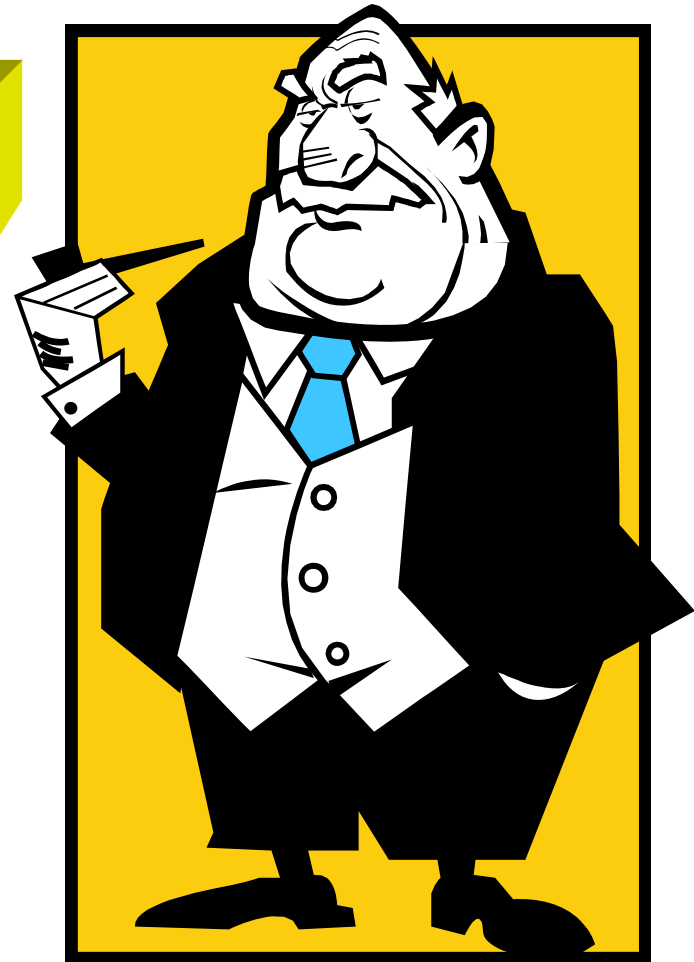
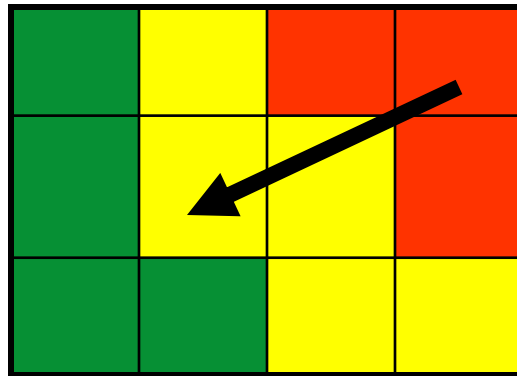
- Acceptable
- Hazards must be documented

Remote-major vs. remote-hazardous?

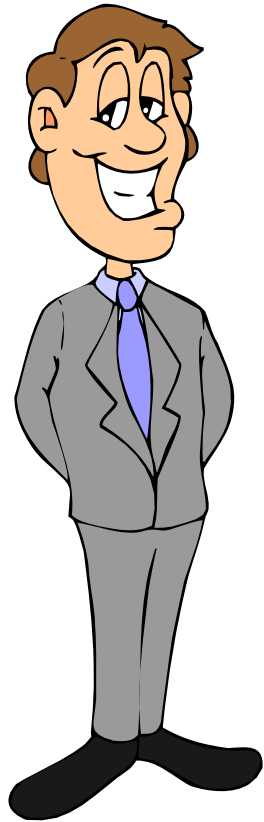
Safety Request



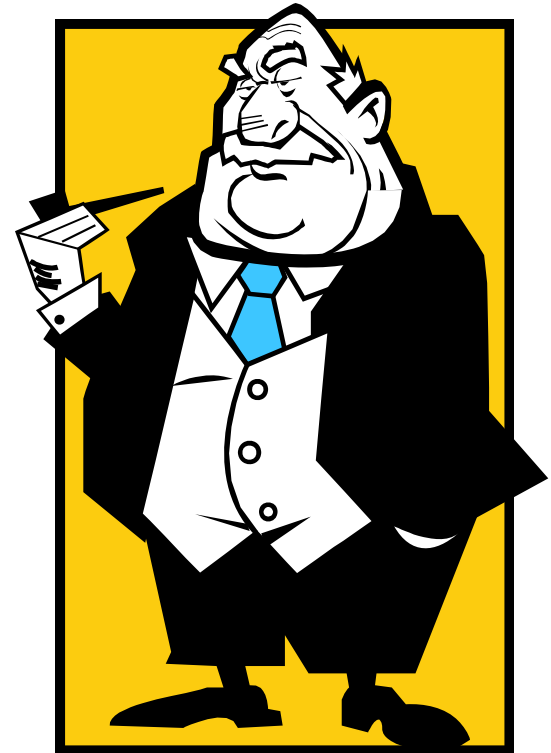
Give me money to
Move Red to Yellow



Safety Request



Give me
money to go
from “probable”
to “occasional”



Traditional

Catastrophic
Critical
Marginal
Negligible
Minor
Major
Hazardous
Moderate
Seldom
Unlikely



What are you talking about?

Frequent
Probable
Occasional
Remote
Improbable
Extremely Remote
Extremely Improbable
Likely

SMS Business Case Request

You write me a check
now for \$150,000



In twelve months I will
write you a check for
\$1,000,000



SMS Business Case for Safety

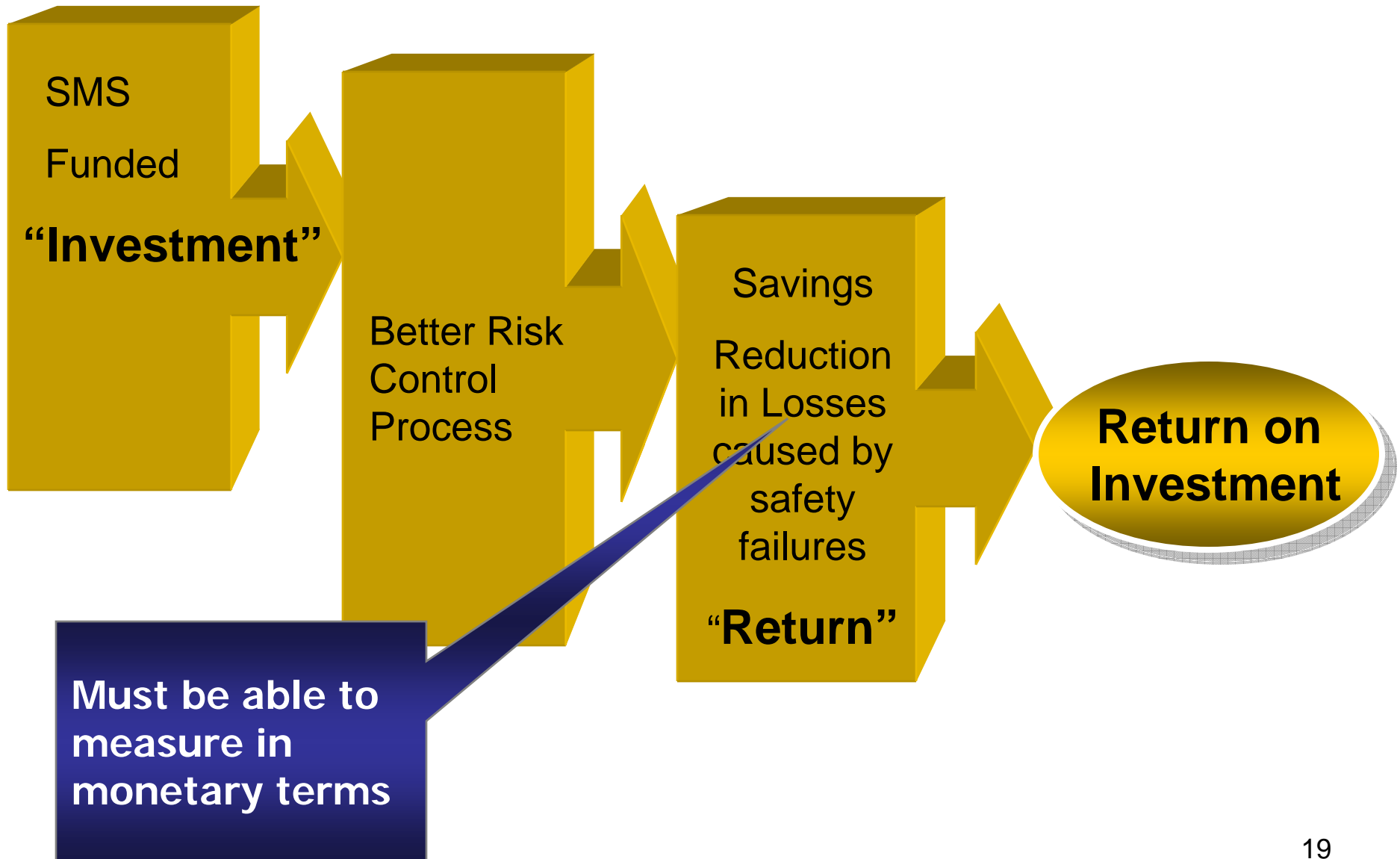
- Last year we lost \$9 million due to safety failures
- Next year, if you let me spend \$500K, we will reduce losses to \$4 million
- I will save you \$4.5 million net!

The SMS Business Case

**When you talk
return on investment**



Making the SMS Business Case



Managers talk money.

How come safety professionals don't?

SMS

- Don't want to
- Not allowed to
- Don't know how

This we can teach

Make the SMS Business Case

The Business Case Approach

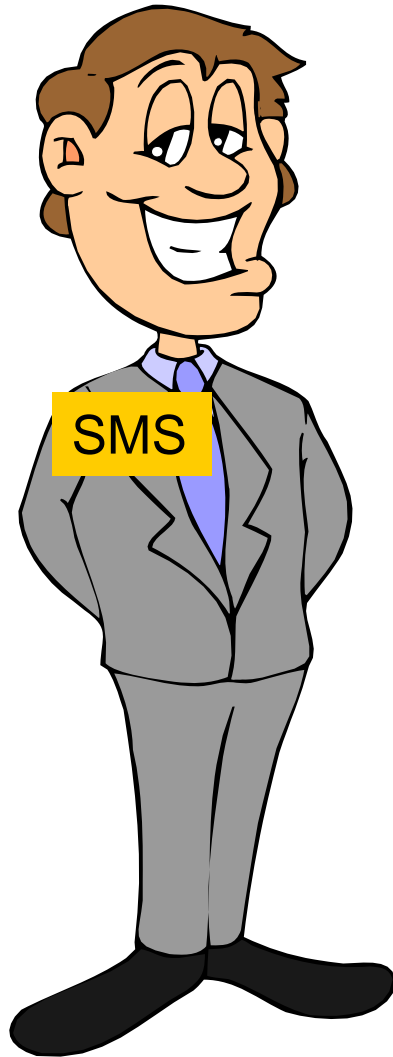
**Return on Investment
(ROI)**

**Projected Safety
Program
Savings**



**Projected Safety
Program Costs**

Money? – did you say money?



Willkommen

Üdvözöljük

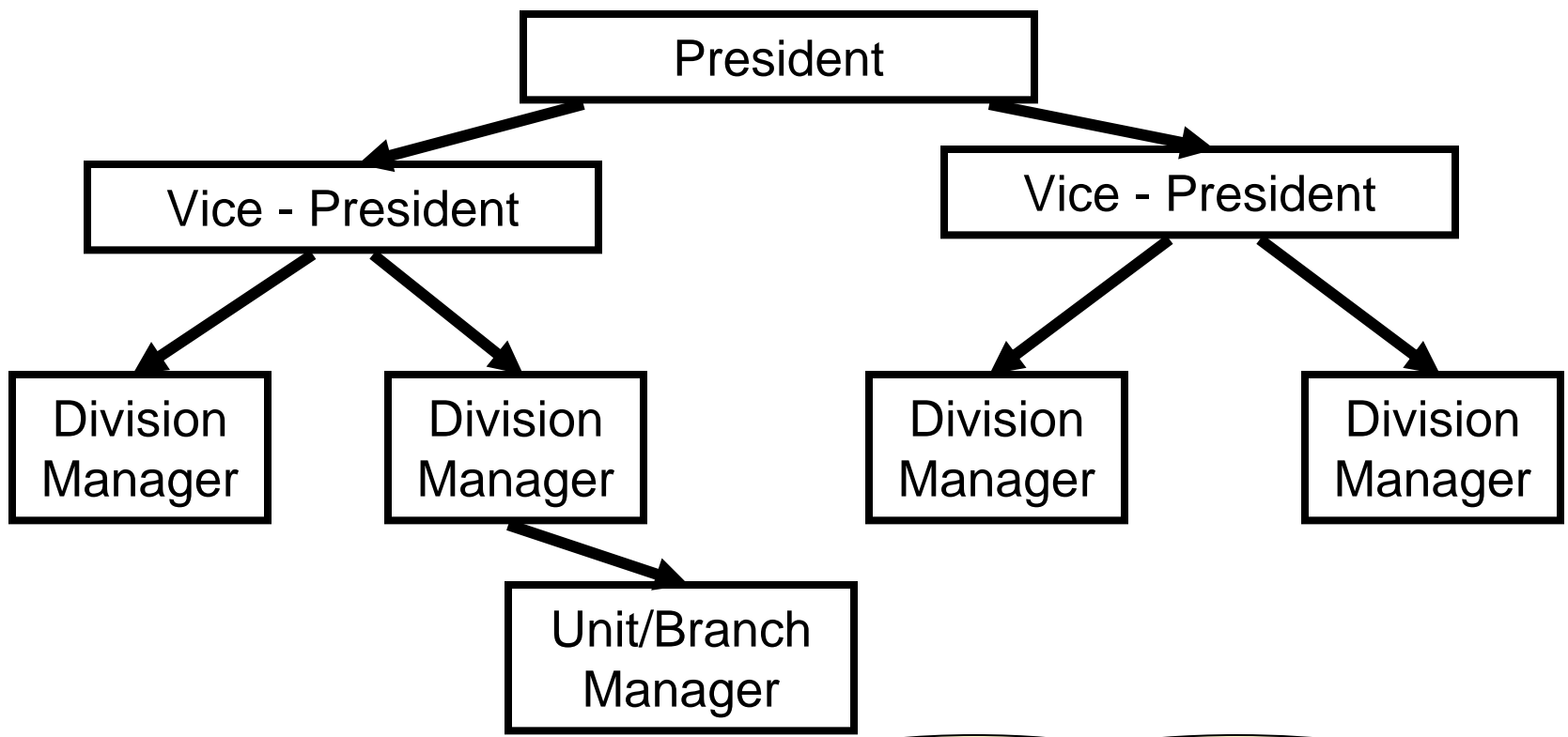
- Money?
- Return on Investment?

Come on in and sit right down

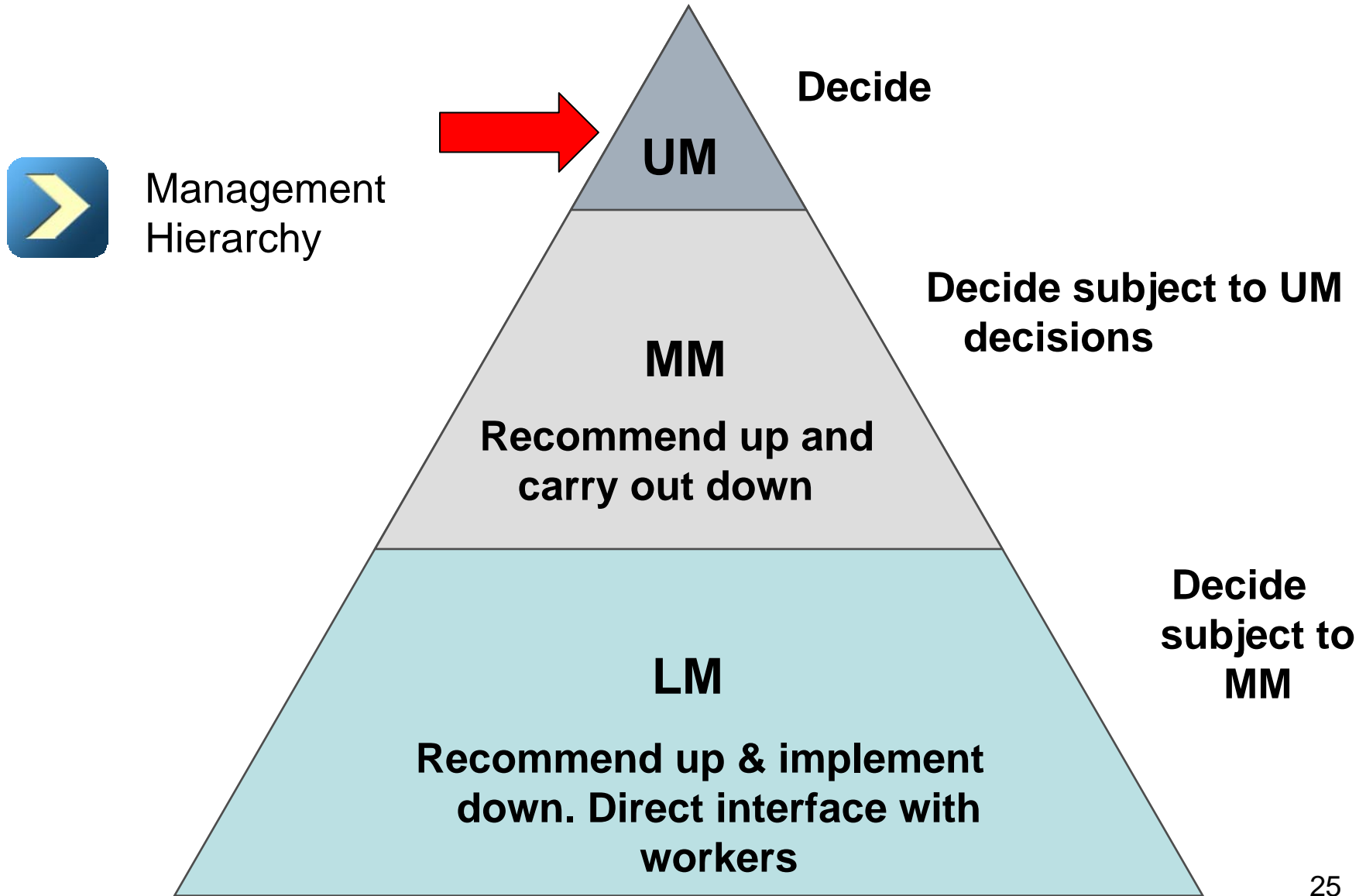


Making the SMS Business Case

Organization Chart



Where to Pitch the Business Case



Management Focus

- The Past
- The Present
- The Future

**The one
thing that
managers
can do
something
about**

**SMS is
proactive. Fix
hazards before
they cause
problems**

Why and When do Managers Make Decisions?

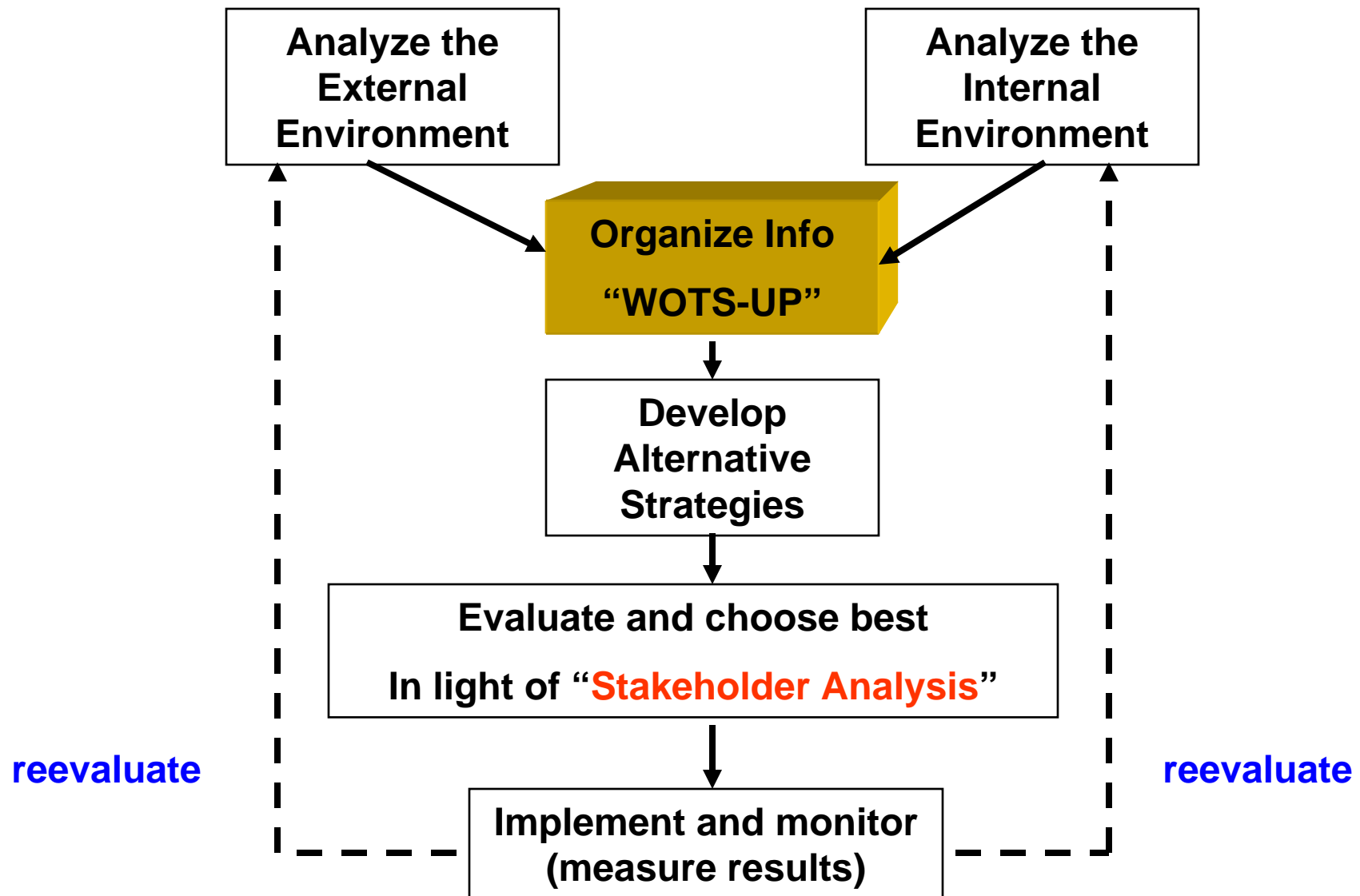
**Traditional Safety –
investigate accident and fix**

**Traditional
Hazard Control**

- **Something went wrong**
- **Something is going to go wrong if we don't do something**
- **New opportunity presents itself – what we have been doing doesn't look so good now**

**Proactive – SMS
What can we do
better**

UM Strategic Planning Process



UM Strategic Planning Process

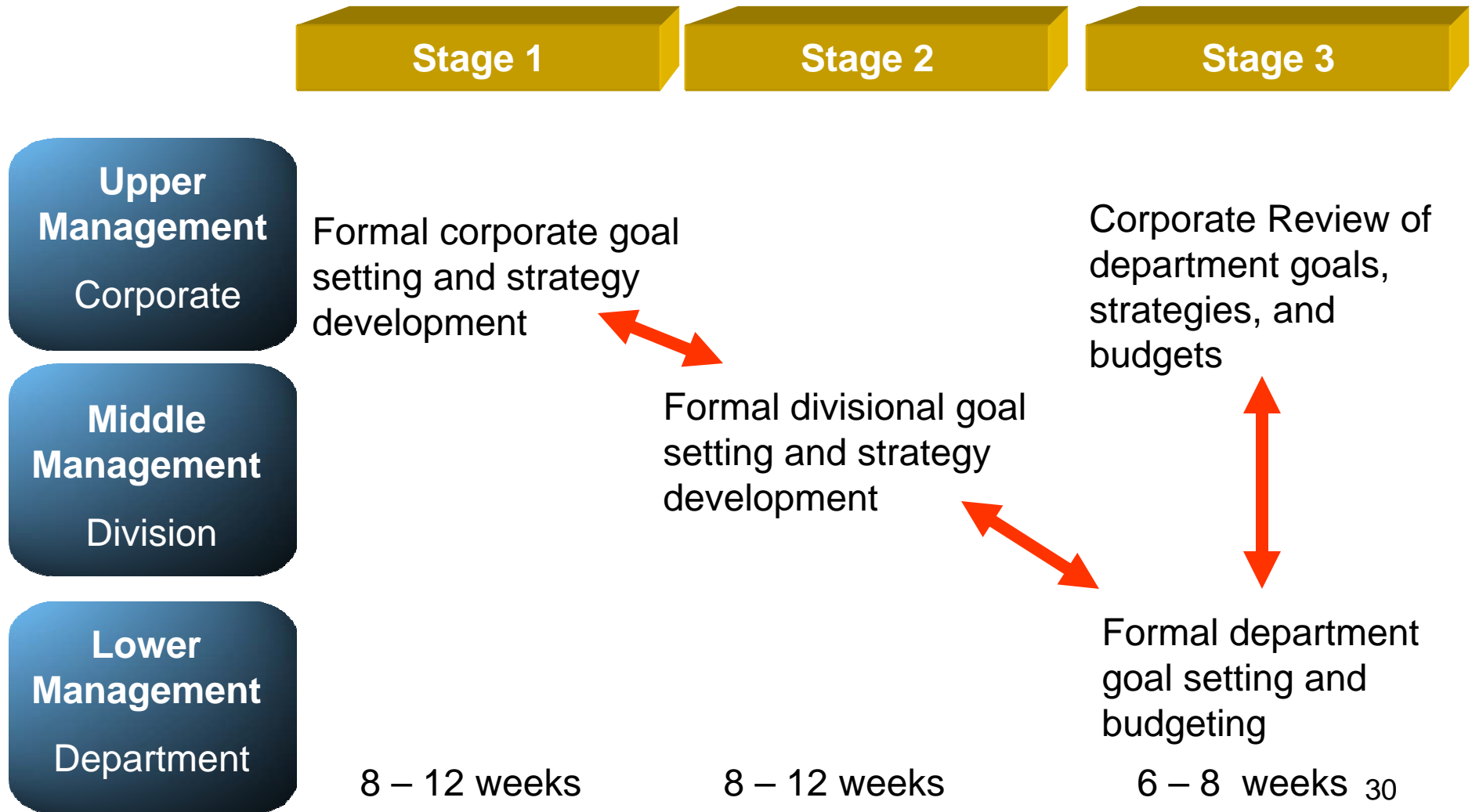
SMS addresses
Safety
Weaknesses

Organize Info
“WOTS-UP”

- W - Organization’s Weaknesses (vulnerabilities)
- O - External Opportunities that can be pursued
- T - External Threats (e.g., new competitors, fuel costs)
- S - Organization’s Strengths

SMS addresses
External Safety
Threats

Strategic Planning and Budgeting Cycle



Budgeting Process

Top Level Goals/Objective

Strategic Plan

Long Range Sales Forecast

Short Term Sale Forecast

Flight Operations Policies
Operations Budget
Equipment Budget
Personnel Budget

Marketing Policies
Advertising Budget
Sales Budget
Customer Services Budget

Passenger Services
Station Budgets
Passenger Svc Budget
In-flight SVC Budget

Technical Ops
Policies
Maintenance Budgets
Facilities Budgets
Engineering Budgets

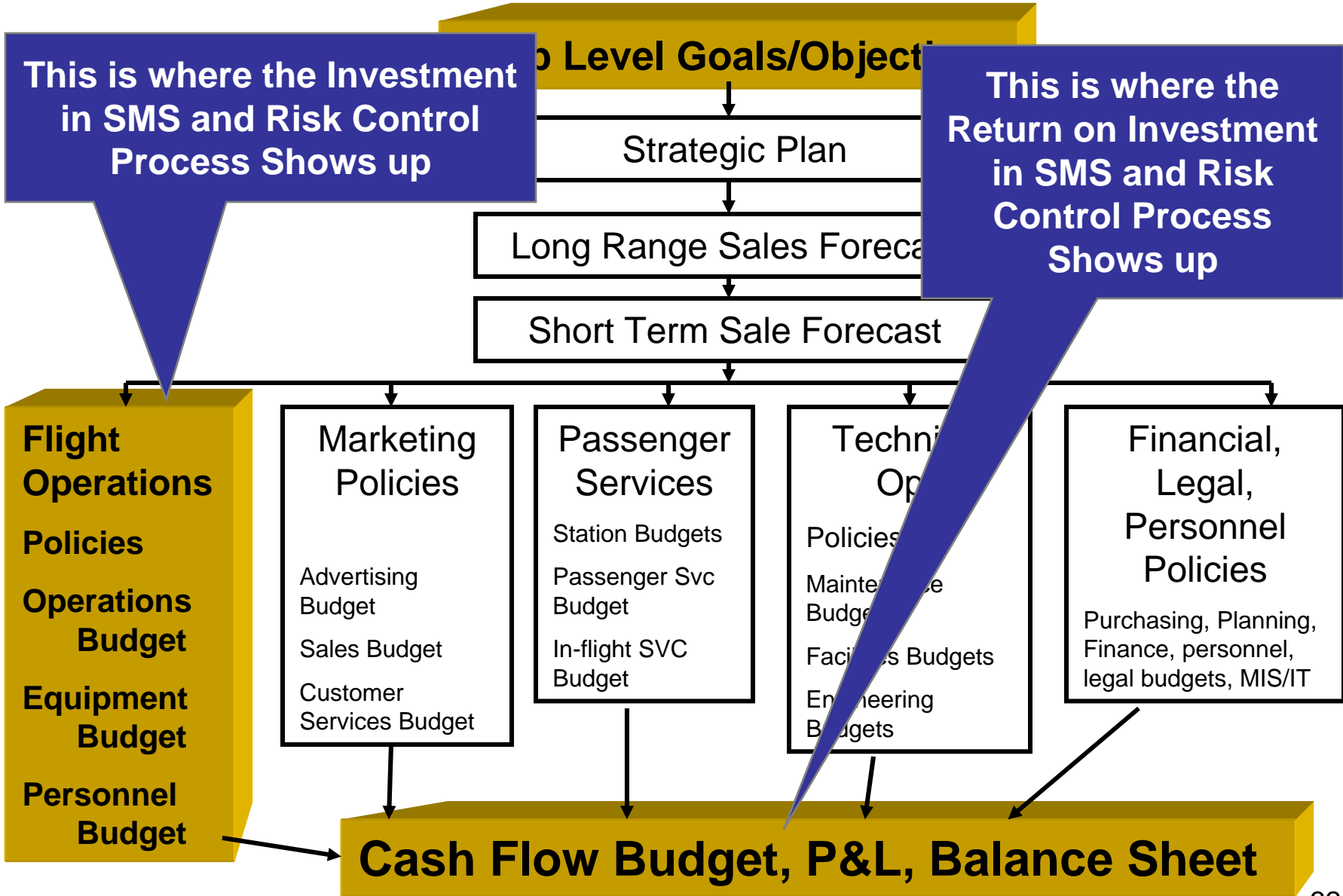
Financial, Legal, Personnel Policies
Purchasing, Planning, Finance, personnel, legal budgets, MIS/IT

Cash Flow Budget, P&L, Balance Sheet

Budgeting Process

This is where the Investment in SMS and Risk Control Process Shows up

This is where the Return on Investment in SMS and Risk Control Process Shows up



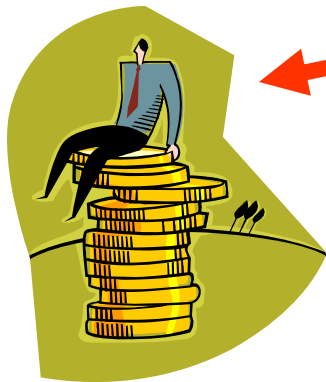
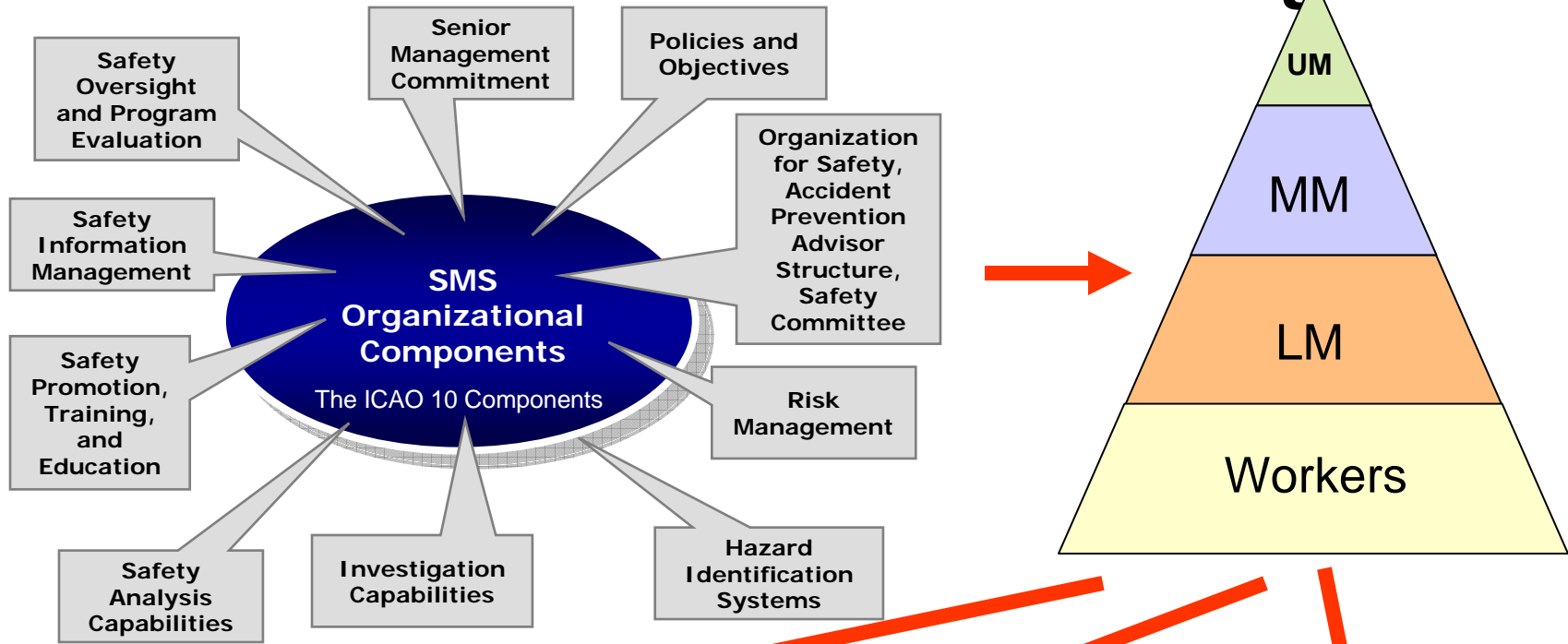
For Sure

No budget for SMS

Means No Investment in SMS

Means Not serious about SMS

SMS Business Case Briefing



Budget



Job Descriptions



Standard Operating Procedures

Manager's Questions

What will “boss” ask after this SMS briefing?

Management and SMS

Q: What is it you want?

1. I want to create a **Safety Management System**.
2. It is required or it is going to be required by regulation and **it will save more than it costs**
3. We already have some or most of the 10 pieces in place
4. I need to add “___” missing pieces
5. I need to connect the pieces up to form an overall system to allow us to **Manage Safety Better and save us a bundle in the process.**

Management and SMS

How much does it cost?

We have 2 missing pieces (per “Gaps Analysis”)

1. Hazard Identification Program

- a) One Time: \$12,000
- b) On-going: \$43,000/year



2. Top Management Involvement - \$0

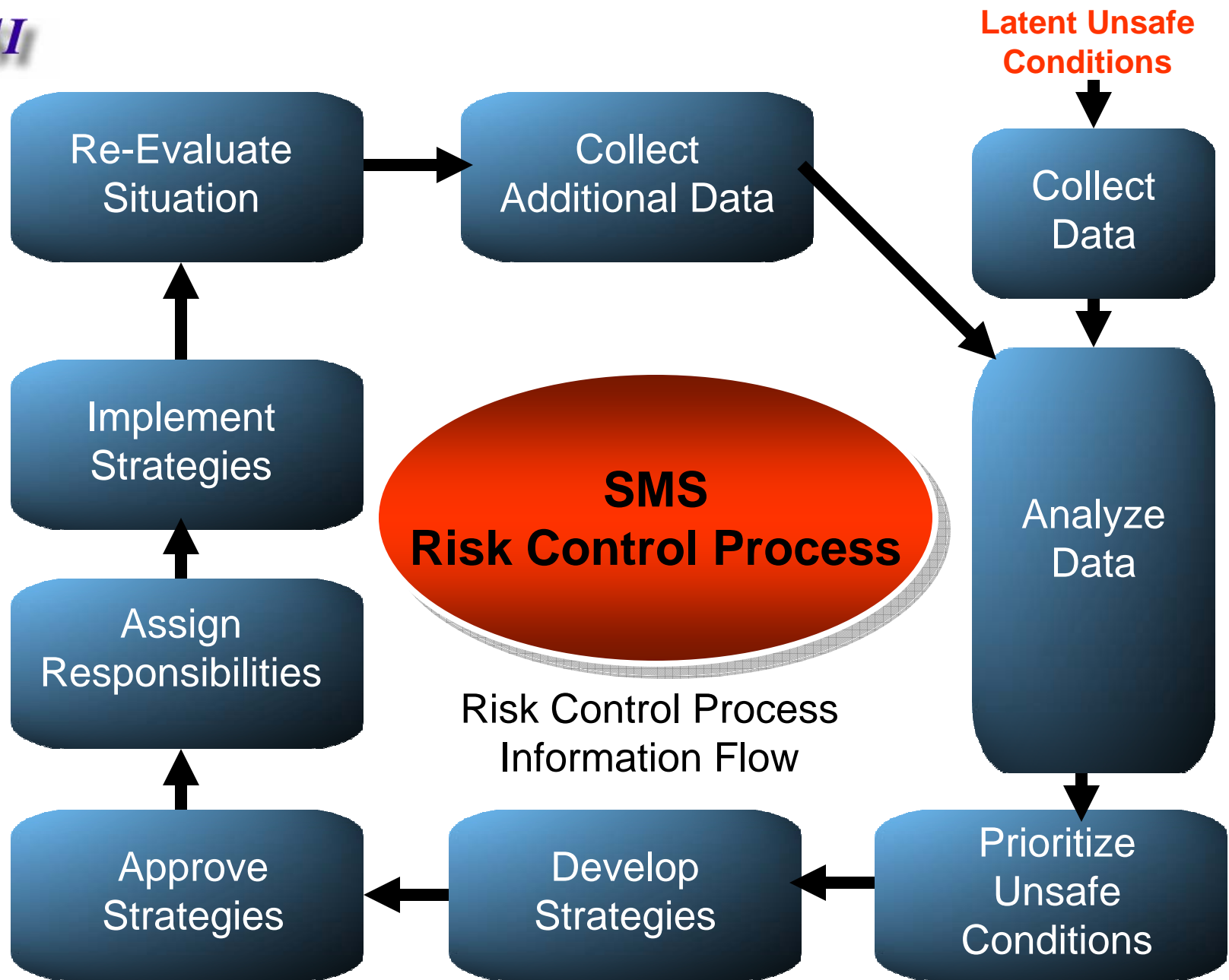
We have one piece that needs to be upgraded

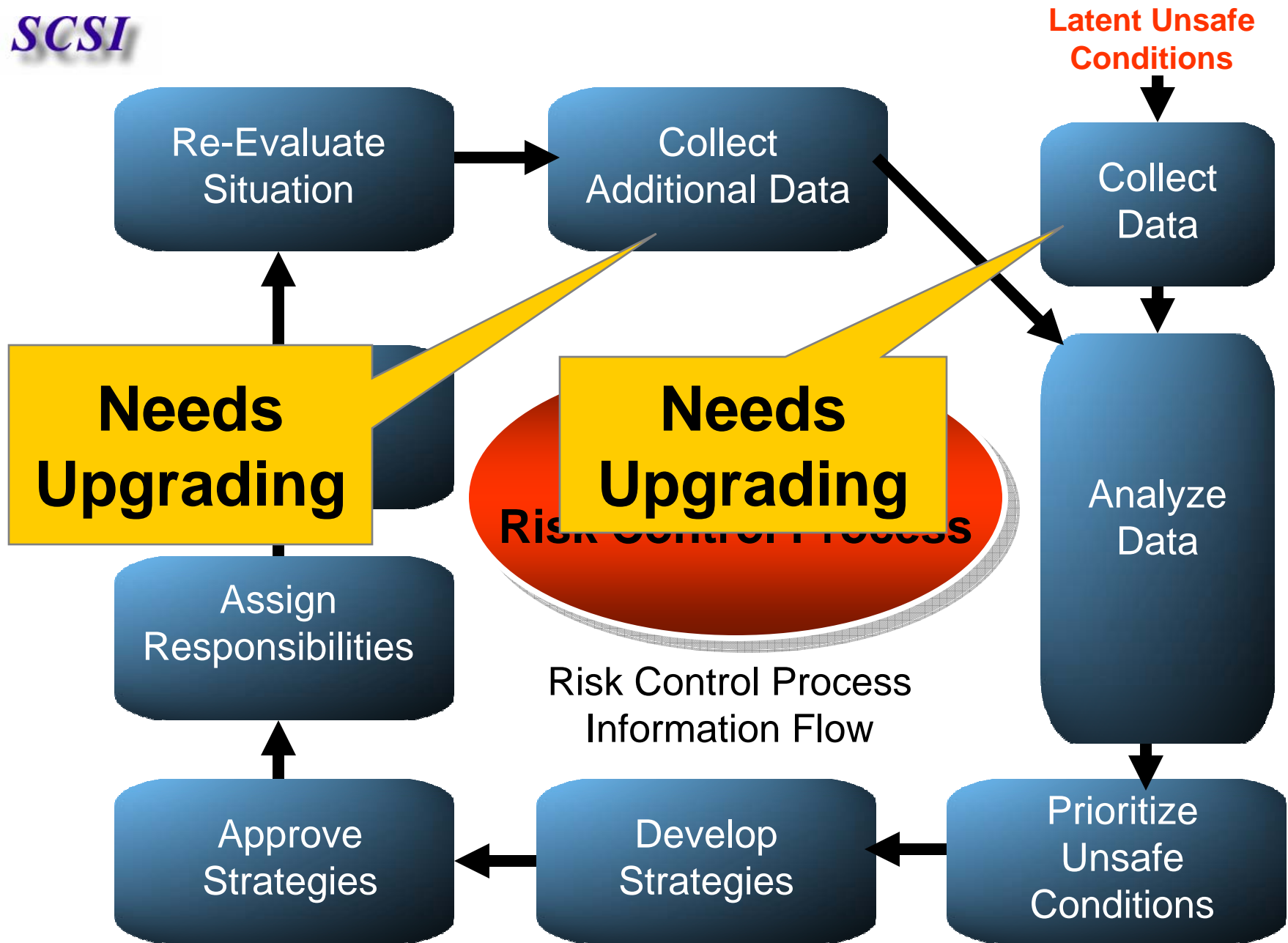
1. Safety Information System

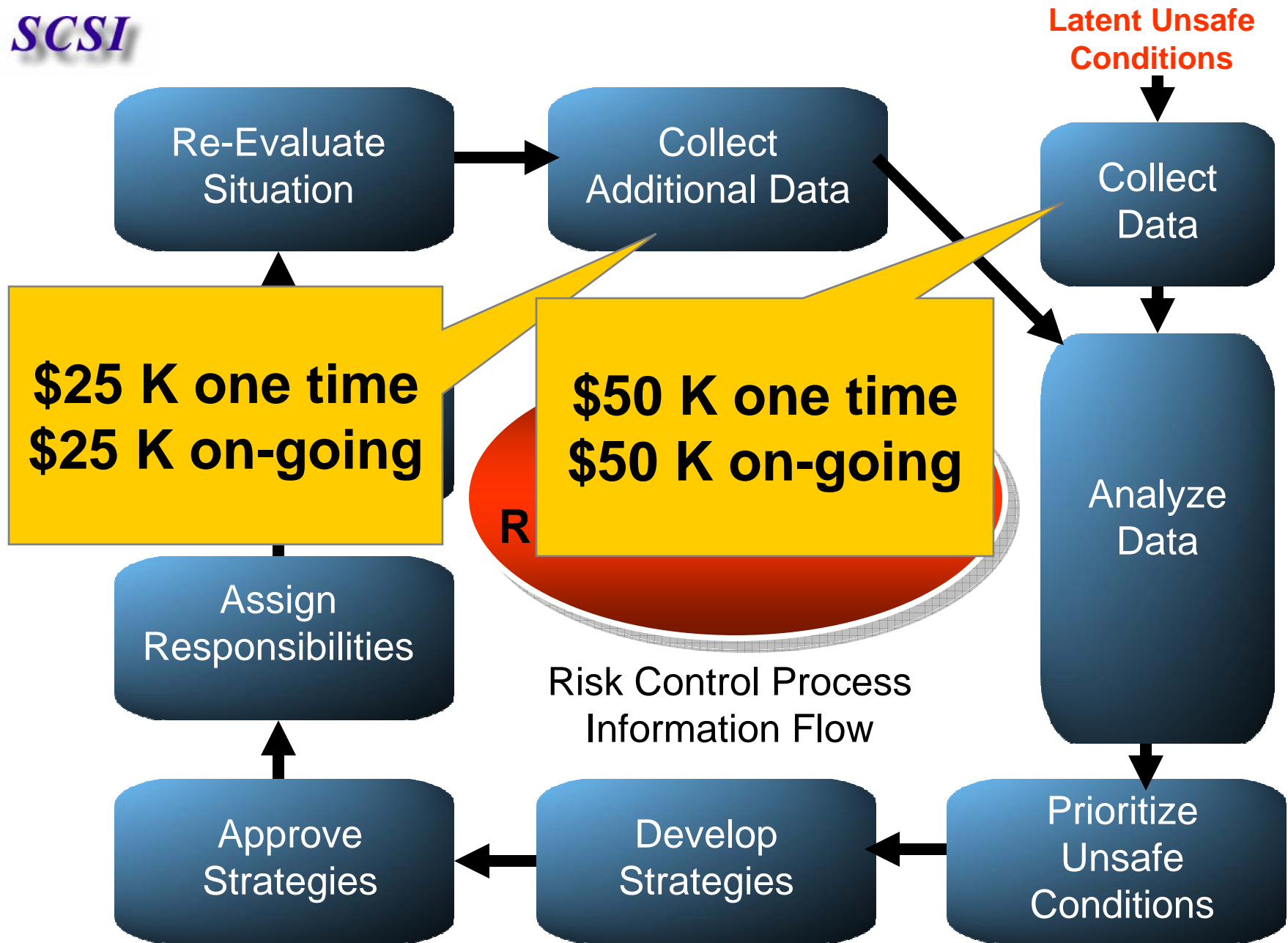
- a) One Time: \$75,000
- b) On-going: \$75,000/year









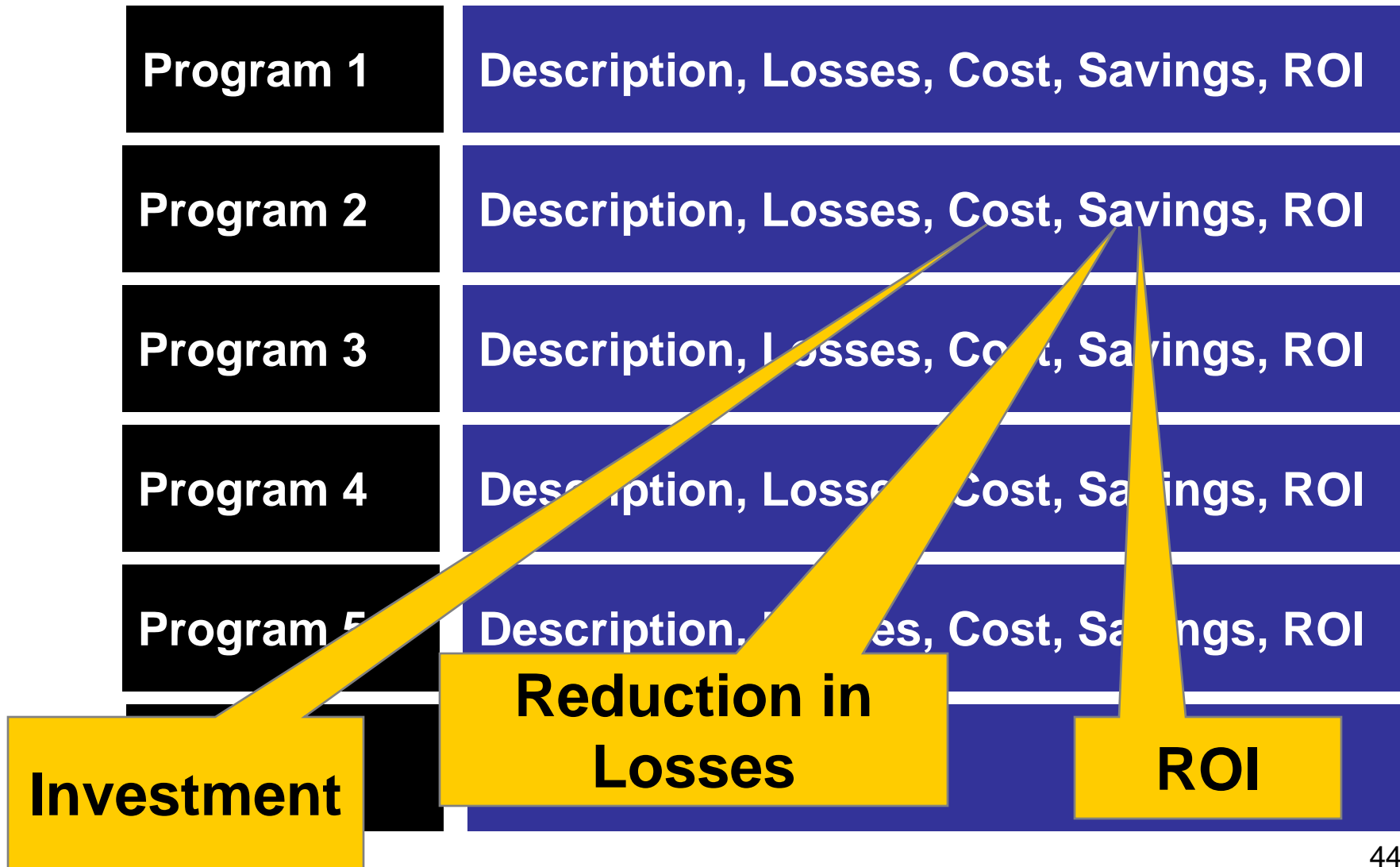


The SMS Payoff

Why Should I?



“The List” of Safety Programs



SMS and Risk Control

The List

For Each Safety Program/Project on the List it Shows

1. Current Annual Dollar Losses due to a Safety Failure
2. Projects Annual Safety Program/Project Cost to “Correct” or Mitigate the Safety Failure
3. Estimates Reduction in Dollar Losses (Savings)
4. Shows Estimated Return on Investment
5. Provides timing and specific details to track results and confirm savings and ROI

SMS and Risk Control

Example of Payoff

Hull Damage due to Baggage Carts, Jetways, Food Service Trucks, LAV trucks

1. Current Annual Dollar Losses: \$24M
2. Projected Annual Safety Program Cost \$ 4M
3. Estimated Savings (Reduction in Losses) \$18M
4. Net: \$18M Saved - \$4M program costs = **\$14M**
5. ROI = $\$18M/\$4M = 450\%$
6. Track and Report Progress Quarterly

Implementing SMS

This financial information needs to be woven into the strategic planning and budget cycle process

SMS Business Case

How: By Creating an SMS “blueprint”

- Everyone can understand
- Showing everyone where they are in the SMS Organization and Risk Control Process

By Whom: You – the safety professional



Implementing SMS

A Blueprint For Both



Reorganizing for SMS and Risk Control

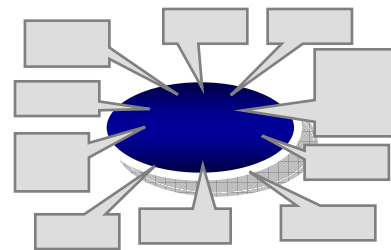
- **New/Revised** Policies and Standard Operating Procedures (SOPs)?
- **New/Revised** Position Descriptions (Job Descriptions)
- **A new Formal Organization Chart** as necessary
- **Eliminate** Obsolete and Conflicting Policies and SOPs after the reorganization?

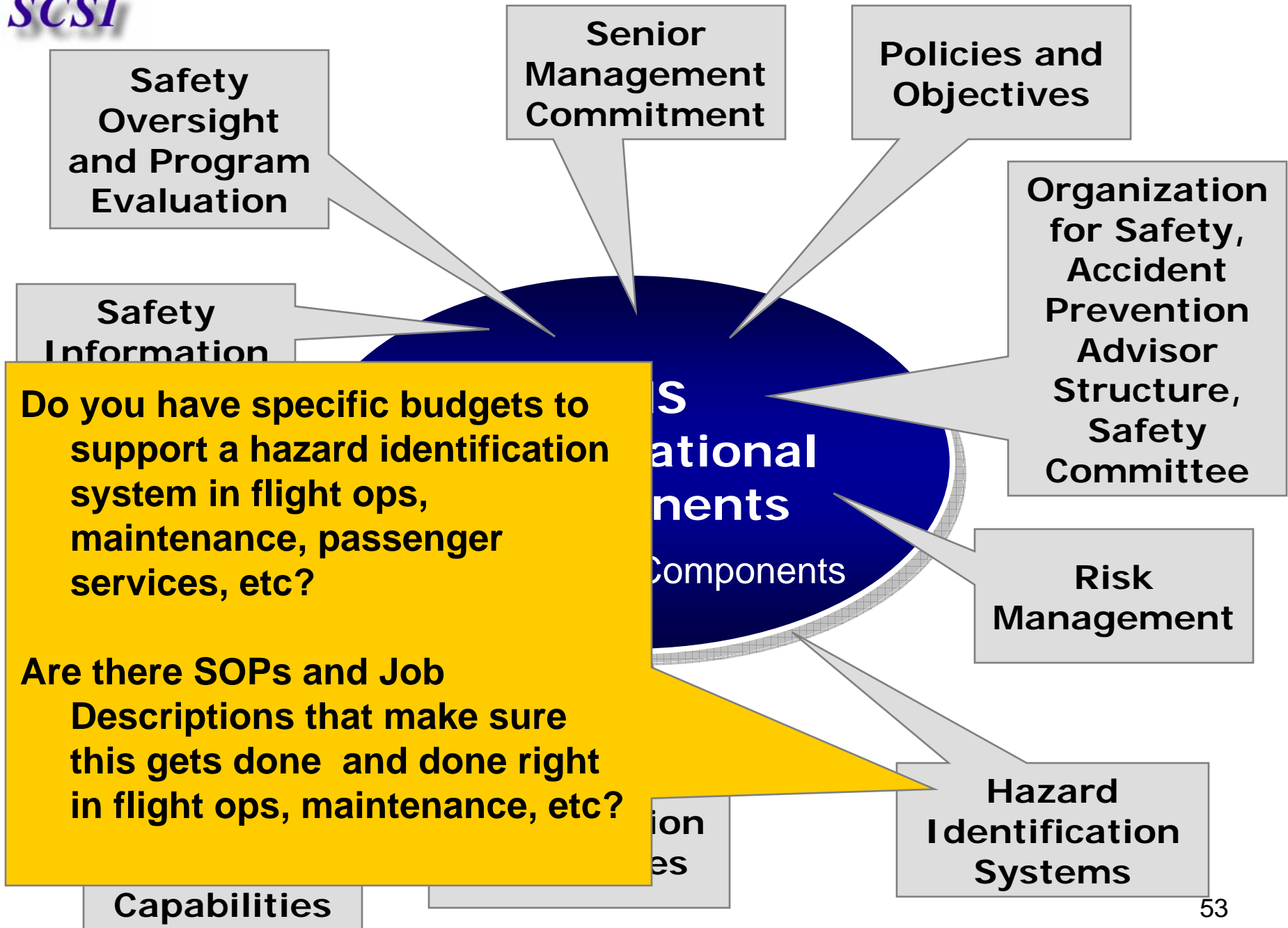


The SMS Blueprint

For all “10” organizational components of the **SMS**

- Shows Who does What, Where, When and How in the organization (SOPs and Job Descriptions)
- Provides each organizational component the budget for “who doing what, where,when and how?”
- Integrates all pieces





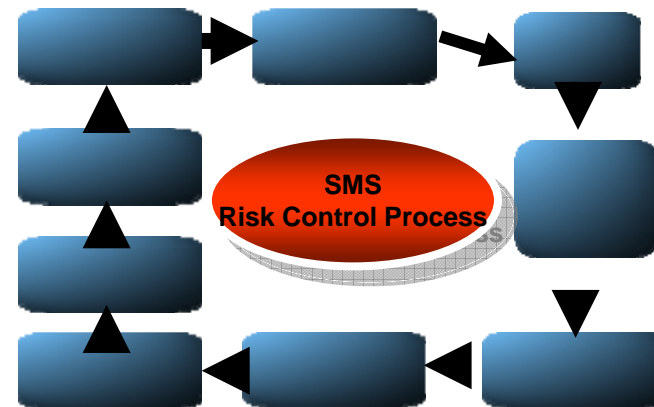




The SMS Blueprint

For the SMS Risk Control Process

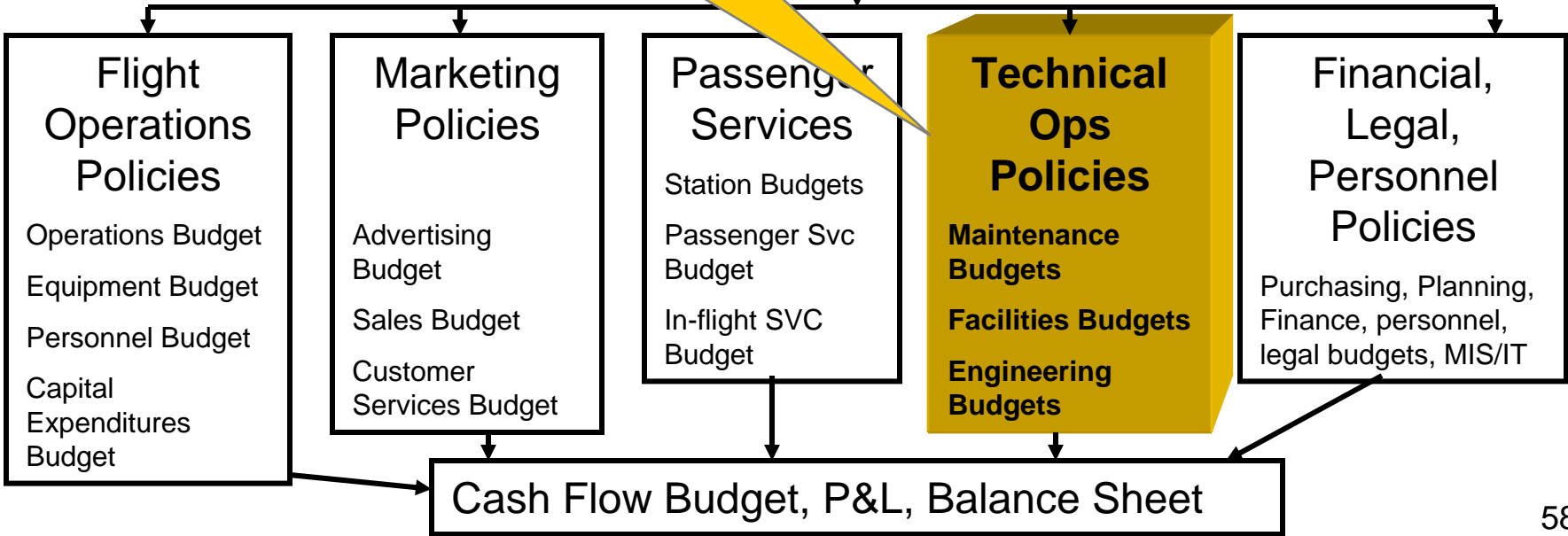
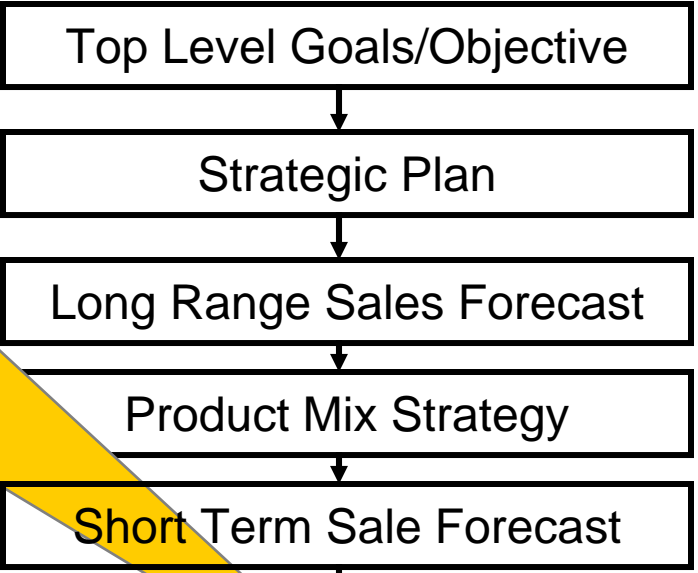
- Shows Who does What, Where, When and How in the organization
- Provides each organizational component the budget to have “who does what, where, when and How?”
- Integrates all pieces



Where are the 10 SMS components budgeted for here?

Portion of SMS Hazard identification system budget here?

SMS/Risk Control SOPs and SMS/Risk Control Job Descriptions here?



The SMS “Product” (The list)

Blueprint Spells out

- **Who is responsible for generating “the list”?**
- **How are “the list” data generated?**
- **How are safety programs identified?**
- **How are safety programs evaluated and selected?**
- **How are safety program costs generated?**
- **How are results tracked? Savings Verified?**
- **How is “the list” woven into strategic planning?**
- **How do programs on the list get funded?**

For each Safety Program on “The List”

- **Description**
- **Current Annual Losses**
- **Projected Program Cost**
- **Projected Savings**
- **Projected ROI**

Two Business Case Projections

- **Project Safety Program Cost**
- **Project Resulting Savings**

Safety Program Costs

Matrix Organization

Safety Program	Flight Ops	Tech Ops	Ramp
FOD	cost?	cost?	Cost?
Hull Protection	cost?	cost?	Cost?
Bird Strike	cost?	cost?	Cost?

FOD Safety Program Direct Costs

Budget Category	Flight Ops	Maint	Ramp
Direct Labor & Fringe			
Materials and Supplies			
Equipment			
Outside Consultants			
Travel			
Materials & Supplies			
Misc.			

Safety Program Indirect Costs

Safety Program/Project Indirect Costs (overhead):

Pro- rata share of SMS Costs

Pro- rata share of Company “overhead”

Safety Program Costs

**Direct Costs + Indirect Costs =
Total Program Cost**

Projecting Safety Program Savings

Projecting Reduction in Losses Due to Safety Failures Quantitatively

How?



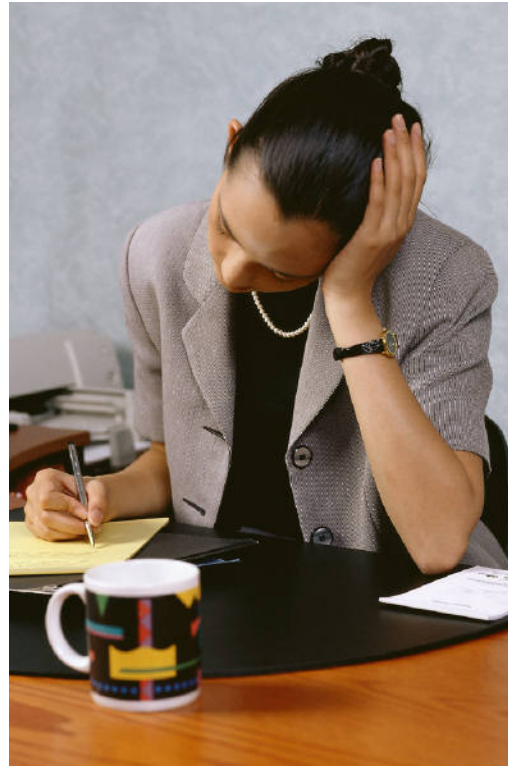
Talk Loss – Not Risk

**A new way to think about Risk
Treat Loss as a measure of Risk**

Talk Loss – Not Risk

Now

**What we
actually lost**



**What we
expect to lose**



Talk Loss – Not Risk

When looking backward in time . . .

Risk can be thought of as what we actually lost due to safety failures

Talk Loss – Not Risk

When looking forward in time . . .

Risk can be thought of as
expected loss or what we
expect to lose due to safety
failures

Talk Loss – Not Risk

Total System Loss
Use a one year time horizon
“Fiscal Year”



Talk Loss – Not Risk

Determining Loss

- Computing last year's Actual Losses
 - Estimating next year's Losses

Looking backward, **Loss** for one year is the Actual Losses for that year



Actual System loss

Total system Loss for last year

- Identify and add up all safety related Losses for the past year

– Example

- 15 times hulls damaged by baggage carts
- Find actual cost per incident and add them up

Looking ahead, Loss for the next year is called

Annual Expected Loss
Called Annual Loss Estimation (ALE)



Projecting System loss

Total system Loss for next year

- If we do nothing different – probably same as last year's loss
- We plan to lose as much next year as we did this year!

– Example

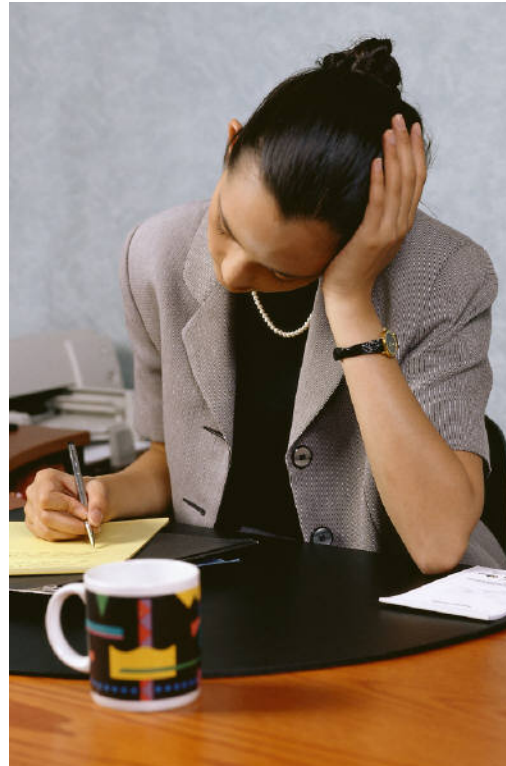
- To project next year's hull damage losses from baggage carts if nothing changes
 - Average loss per instance and multiply by 15 – same loss as last year
 - If double the flights, then multiple average loss by 30

Now

1 year



**Actual Loss
for last year**



1 year



**Annual Loss
Estimation
(ALE) for next
year's losses**

t

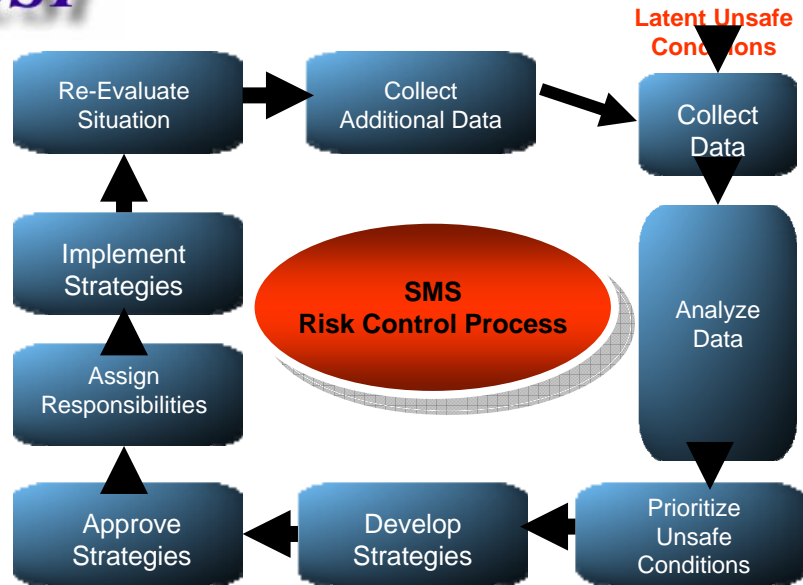
Actual and Expected Loss

How do we do this?

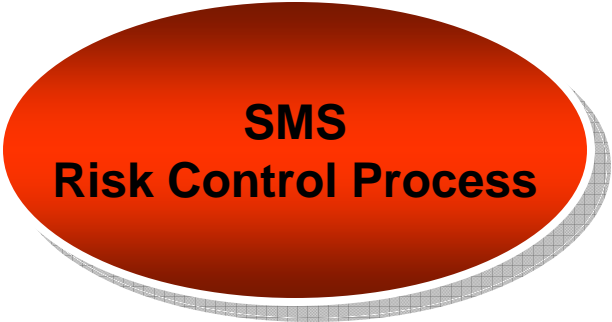


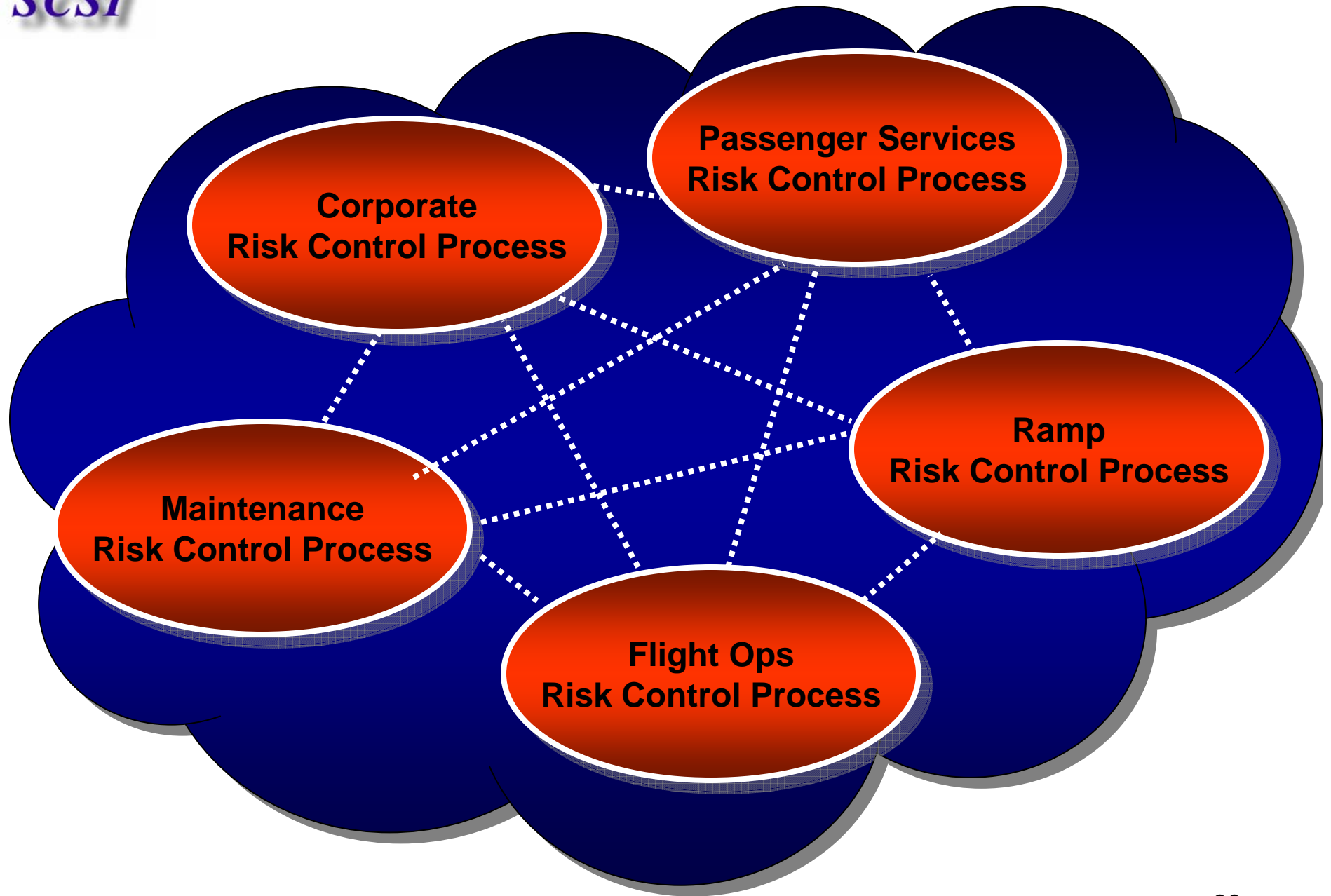
Collect
Data

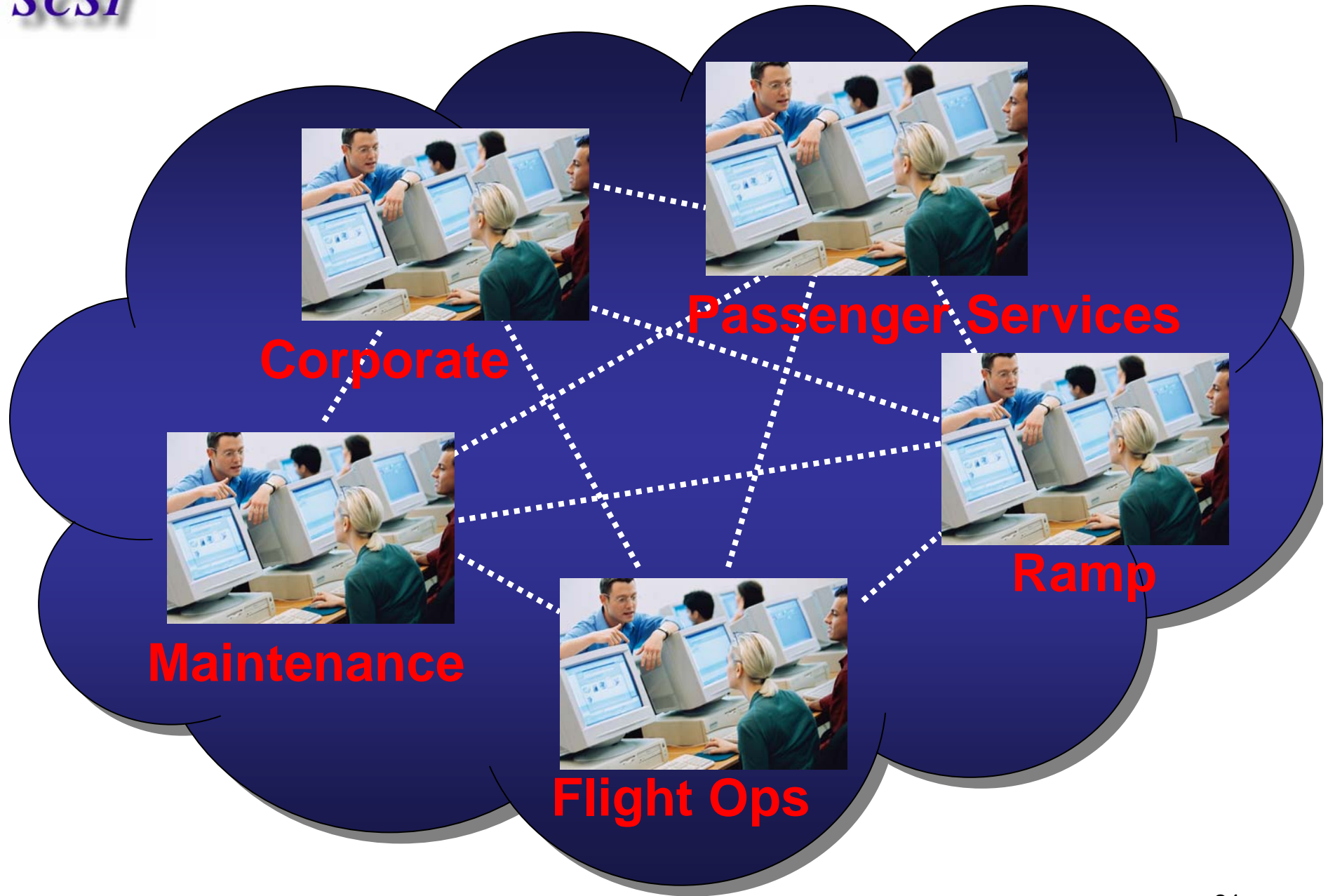




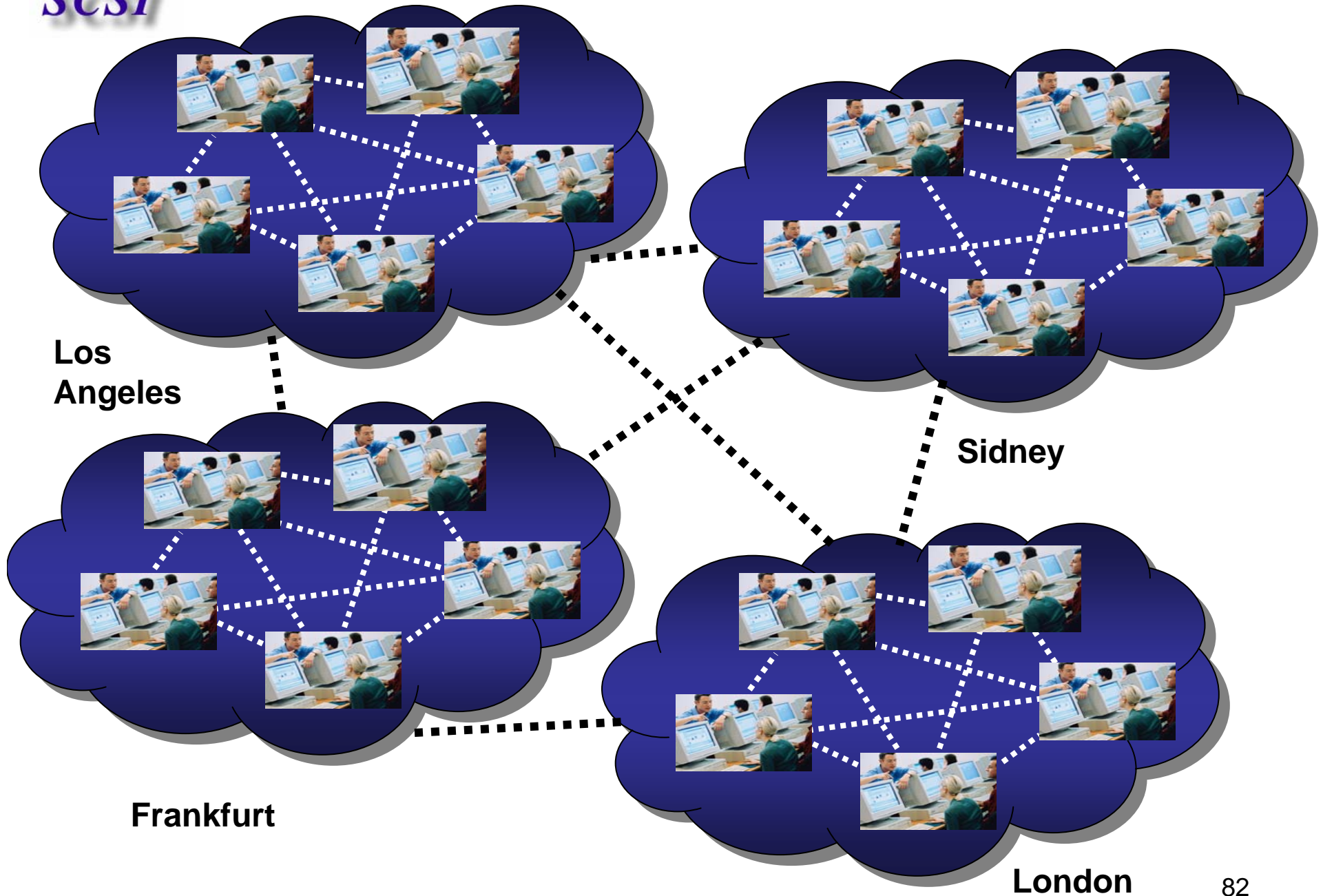
Risk Control Process can Produce the Data we will need







SCSI

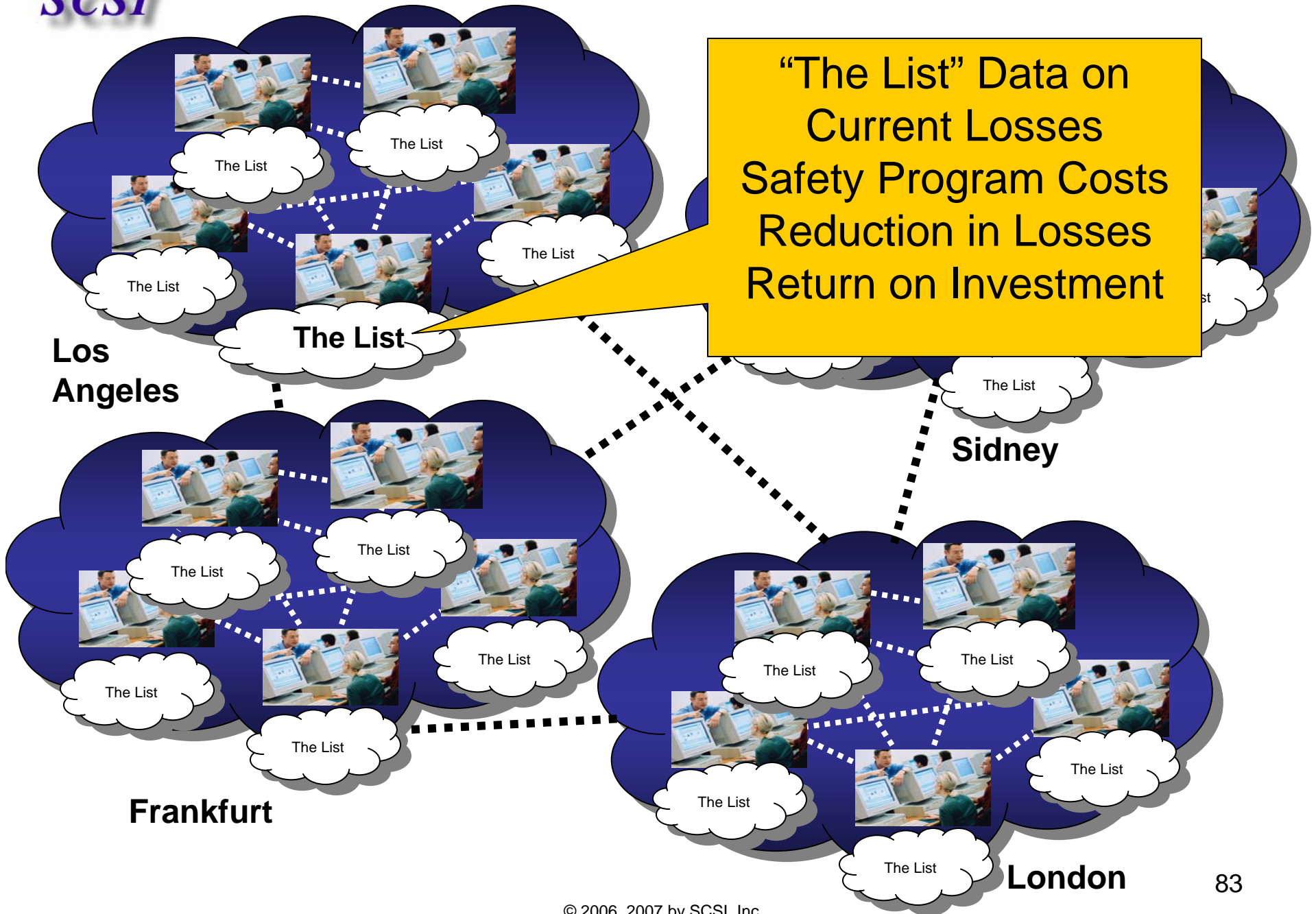


Los Angeles

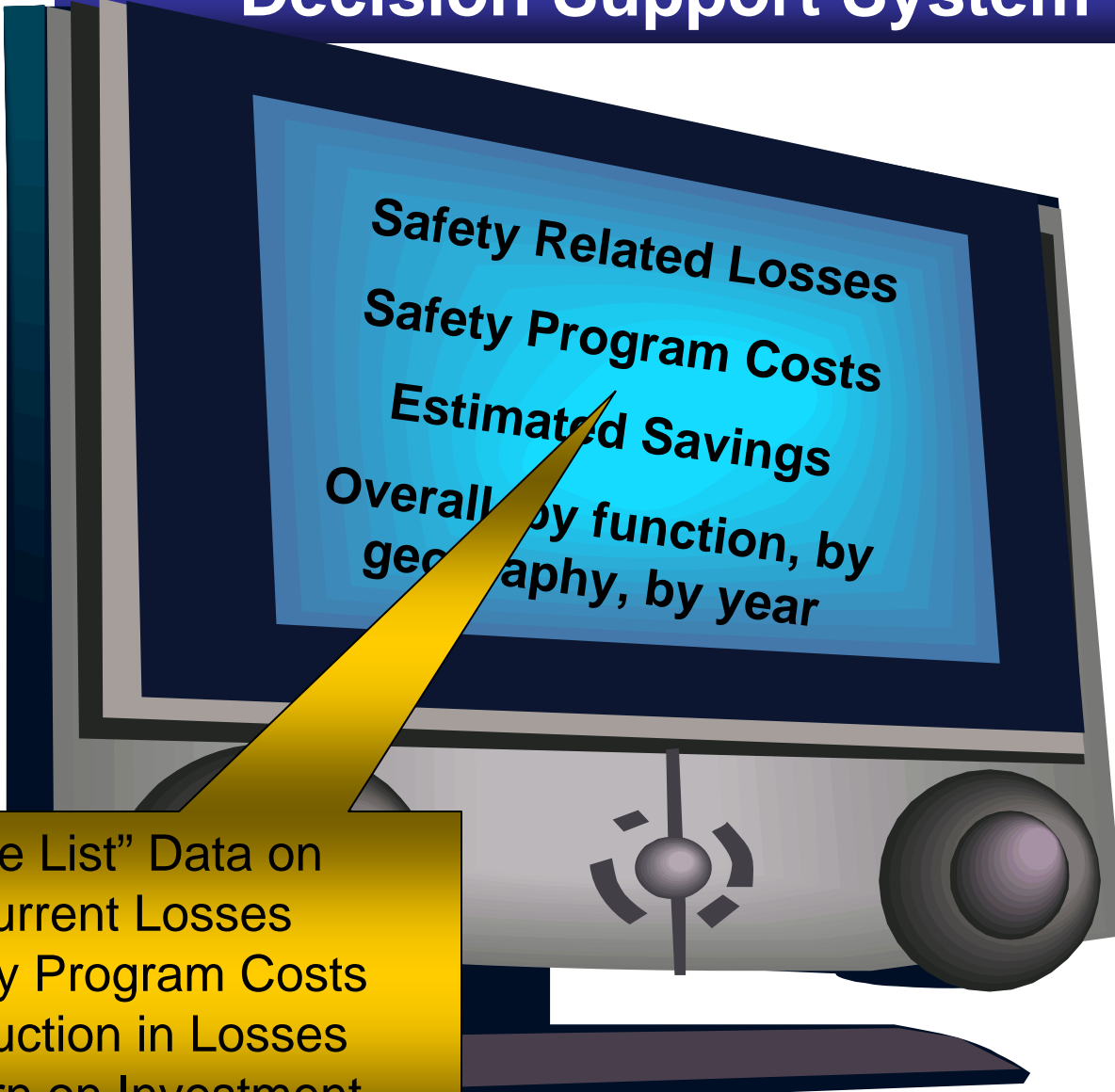
Sidney

Frankfurt

London



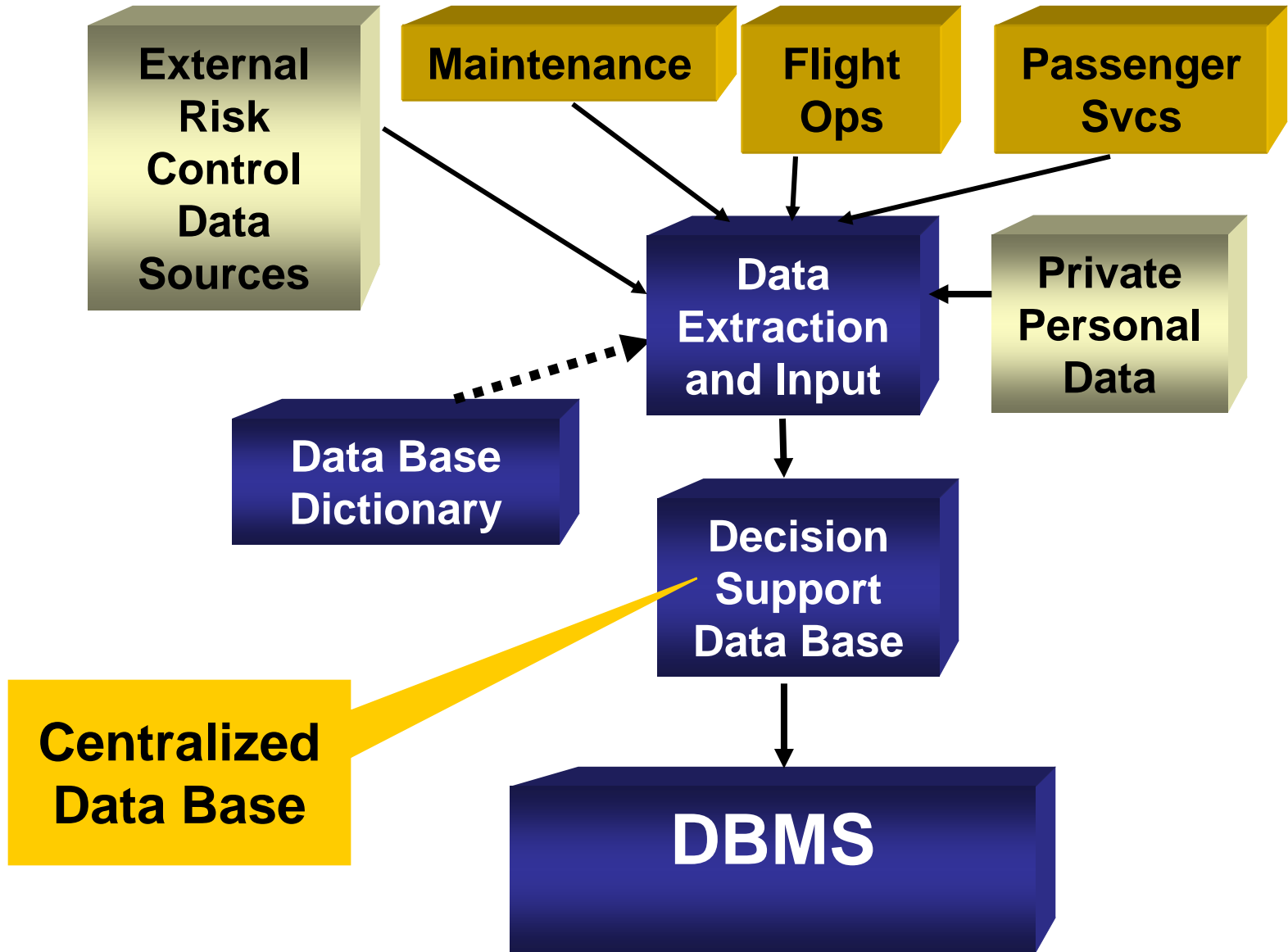
Decision Support System



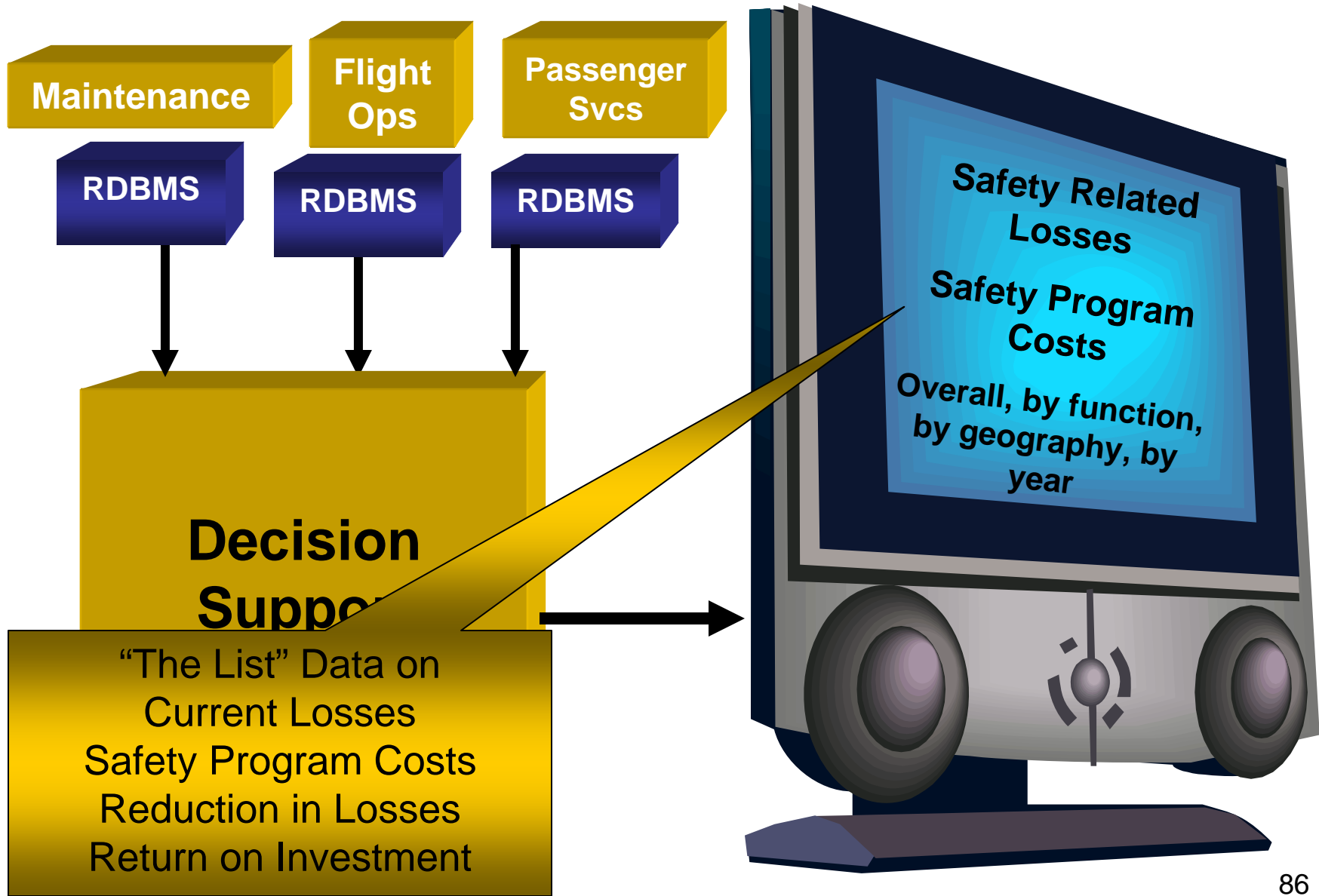
Safety Related Losses
Safety Program Costs
Estimated Savings
Overall by function, by
geography, by year

“The List” Data on
Current Losses
Safety Program Costs
Reduction in Losses
Return on Investment

Decision Support System



Decision Support System



SMS Loss Data Collection

Direct Losses: On-Going Reporting

1. Each occurrence of each category of loss (e.g., FOD in engine, hull damage by jetway, bird strike on windshield, etc.) including date, time, and location
2. Dollar loss for each occurrence including date, time, Location
 - a) Parts (including swapping parts)
 - b) Labor (maintenance man-hours)

SMS Loss Data Collection

Direct Losses

Data Entry personnel

- a) Recognize a loss and that it is related to safety
- b) Correctly know category of loss – need **data base dictionary** to guide
- c) Correctly record dollar loss, date, time, & location for each occurrence

SMS Loss Data Collection

Repeat for Indirect Losses (Ripple impacts)

e.g., plane out of service – lost revenue

**e.g., cost of all extra paperwork associated with
accident/incident**

Information System provides ability to

- 1. Direct and Ripple dollar loss for each safety related loss**
- 2. Track losses monthly and cumulatively**
- 3. Provide ability to “drill down” and “sort” losses (by type, cost, frequency, location, time of year)**
- 4. Rank order all safety failures by annual (quarterly) dollar loss – by location, time of year**

SMS Information

**What about losses that have
not yet occurred?**

- **Once in 10 years** \longrightarrow **$p = .1$ in any year**
- **Damage when it occurs = \$2,000,000**
- ***“Expected Loss”* in any year = \$200,000**

Key Points

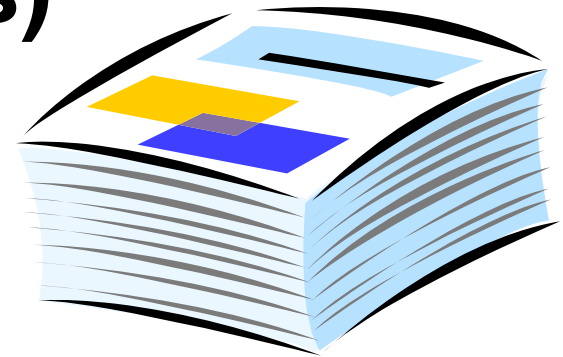
- Present the ROI Business Case to UM
- Get the commitment of UM
- Become fully involved in the Strategic Planning Process and Budgeting Cycle
- Weave SMS/Risk Control into Strategic Planning
- Create SMS/Risk Control Budgets and Blueprints
- Be able to produce, fund, and implement from “the list”
- Show projected savings exceed projected costs
- Have plan to verify that savings exceed costs

SMS Business Case Checklist

1. Executive Summary (one page)

2. Contents (10-20 pages)

- ▶ **What you want**
- ▶ **What it will cost**
- ▶ **What the payoff will be**



SMS Business Case Checklist

3. Appendices (details)

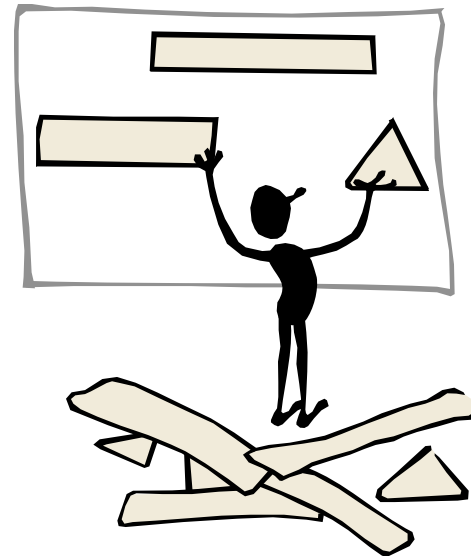
- ▶ **Gap analyses**
- ▶ **Costs to close gaps**
- ▶ **Blueprints throughout organization including SOPs, job descriptions**
- ▶ **Data, data collection, use of data**
- ▶ **Safety program costs (Initial list) and projected savings. Ranked by ROI**
- ▶ **Implementation plan (organizational change)**

Where to Start

Baby Steps



Earthquake Approach



Where to Start

Make a “good” business case

- **Easy to explain**
- **Least Controversial**
- **Doesn't cost a fortune**
- **Least Organizational Change**
- **Most likely to demonstrate success**

Unanticipated SMS Implementation Benefits

- **Organizations have experienced unsolicited Insurance Premium Reductions**
- **Greater involvement with safety issues**
- **SMS captures/retains corporate knowledge**
 - ✓ **During staff turnover**
 - ✓ **Safety Information from Risk Assessments**
 - ✓ **Best Practices within Industry**
- **Operational suggestions from staff**

Unanticipated SMS Implementation Benefits

- **Assists in developing effective policies**
- **Enhanced corporate efficiencies**
 - ✓ **Improvement in Hazard ID – better overall communications in all areas**
 - ✓ **Greater “ownership” with the staff**
 - ✓ **Improved utilization of resources**

Unanticipated SMS Implementation Benefits

- **Creates Safer Work Environment**
 - ✓ **Reduces unsafe shortcuts**
 - ✓ **Peer monitoring of safety standards**
- **Less Damage/Longer Operational Life of Equipment**
- **Enhanced long term stability of operations**

