

MANAGING EXTREMES

Willis Re

EFFECTIVE COMMUNICATION FOR ACTUARIES

Alice Underwood / Jason Rosin

CARe 2011

The background of the slide is black with several glowing, curved lines in shades of blue and orange. These lines are scattered across the lower two-thirds of the slide, creating a dynamic, abstract pattern.

Antitrust notice

- The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.
- Under no circumstances shall CAS seminars be used as a means for competing companies or firms to reach any understanding – expressed or implied – that restricts competition or in any way impairs the ability of members to exercise independent business judgment regarding matters affecting competition.
- It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.

How can actuaries be better communicators?

Willis Re

MANAGING EXTREMES

- For various audiences
 - Mostly actuaries
 - Mostly non-actuaries
- In specific contexts
 - PowerPoint
 - E-mail
 - Reports and technical papers

Focus on your audience

- What's in it for them?
- What do you want them to “take away”?
- What context will help them “get it”?

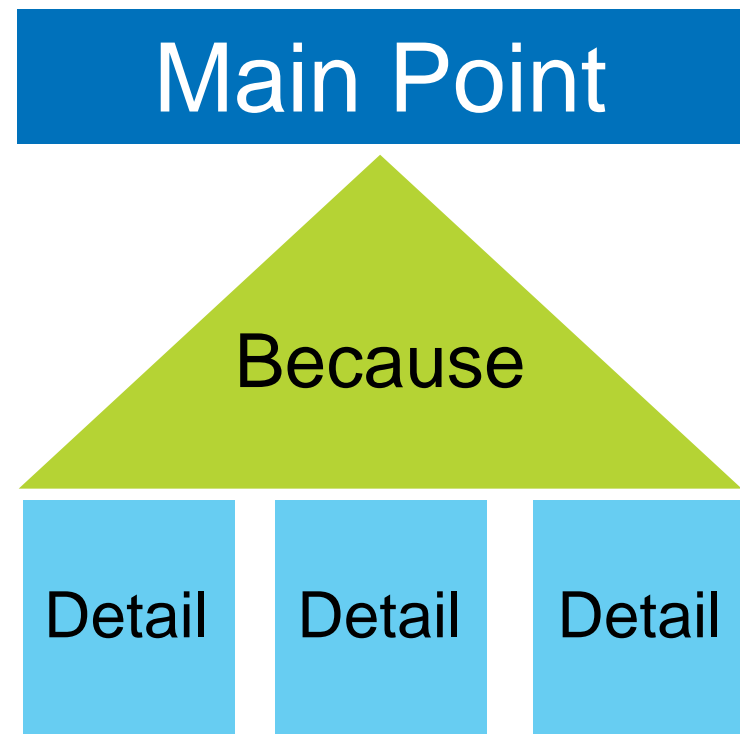
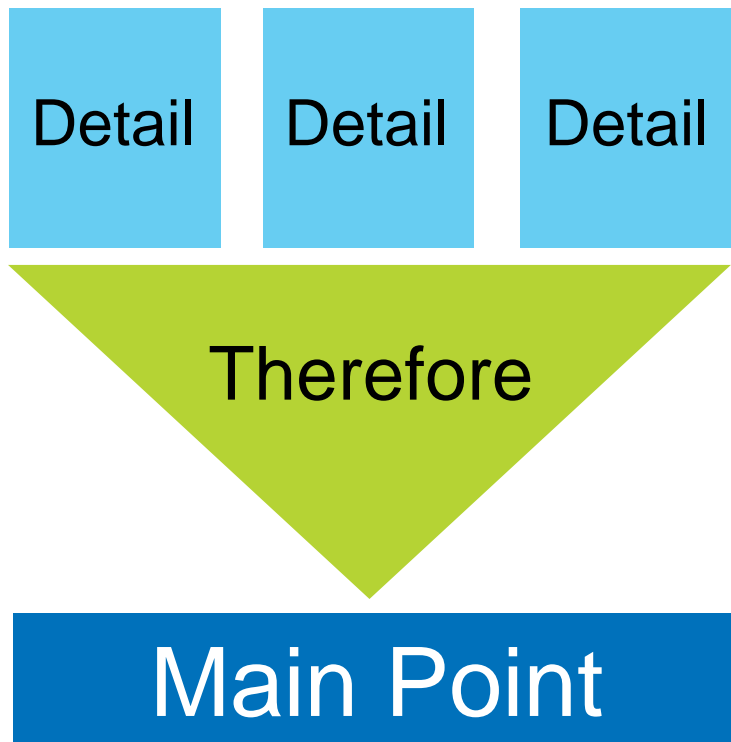
ACTUARIAL AND NON-ACTUARIAL AUDIENCES

Willis Re

MANAGING EXTREMES



Ordering your material

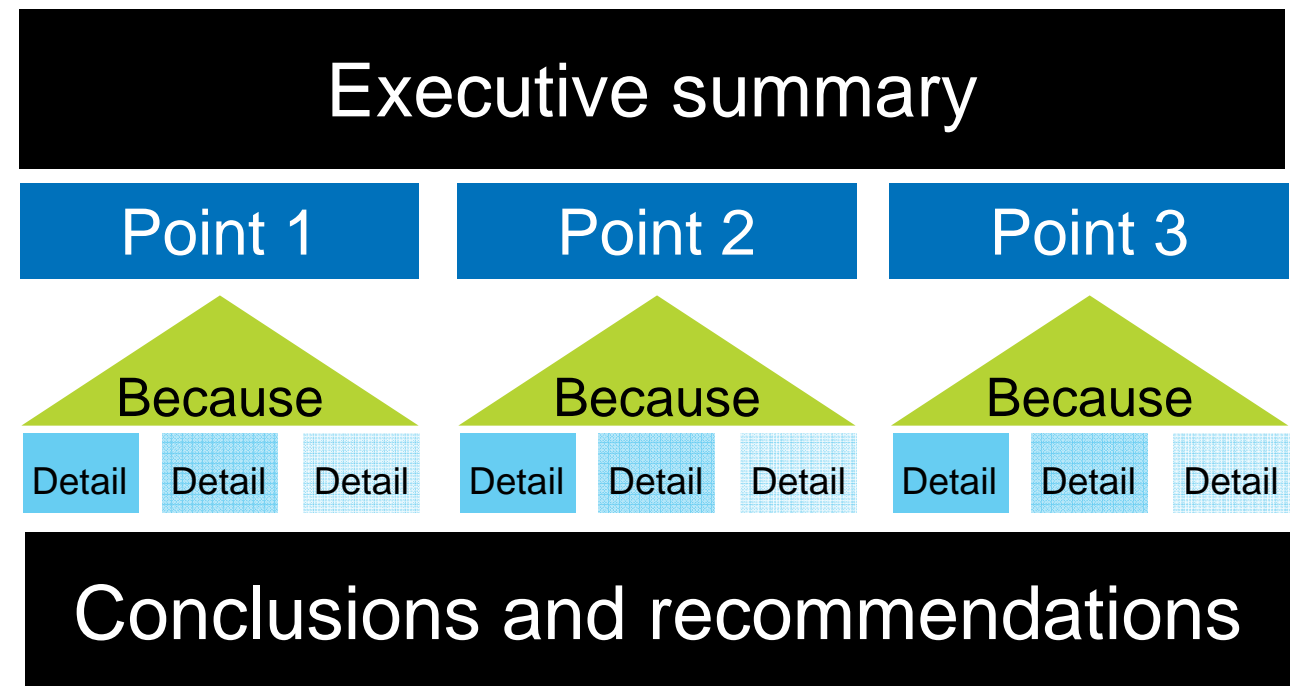


Complex material

Crucial!

Only a few:
ideally
3 or less

Keep to
minimum
required



What do you
want them to
“take away”?

Tell them what you're going to tell them...

Tell them...

Then tell them what you told them!

Keeping it real

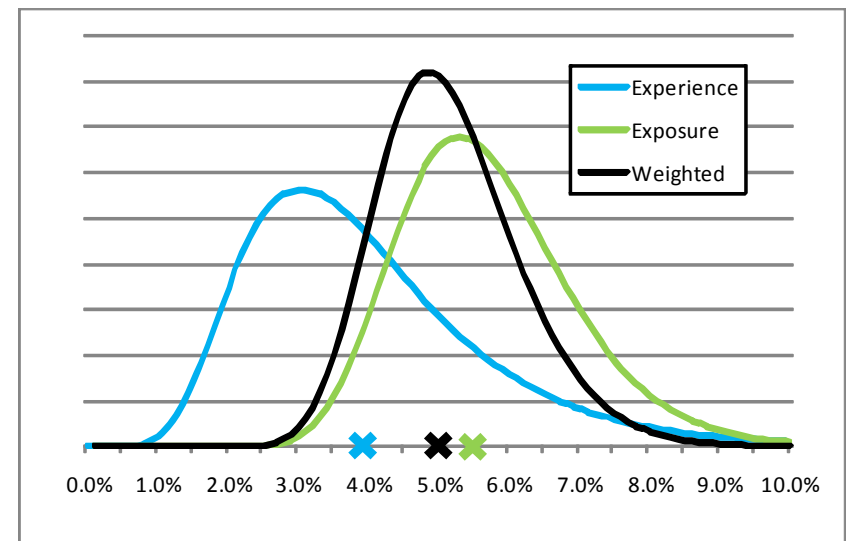
- Explaining a technical concept requires strategy before you speak (or write)
- **Examples** may help explain technical concepts to other actuaries
 - Need to understand the *calculation* to gain comfort
- **Analogies** are often best suited for a less-technical crowd
 - Need to understand the *concept*
 - Allows audience to relate the process to something they already understand
 - Generally they're willing to let you handle the math

Keeping it real

- Credibility theory by example
- Two unbiased estimators:

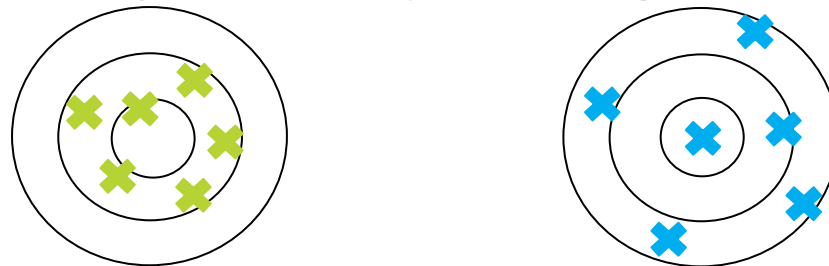
	Mean	Std. Dev
Experience	4.0%	1.8%
Exposure	5.6%	1.2%

- Goal is to create best estimator with minimized uncertainty
 - $(z)(\text{Experience}) + (1-z)(\text{Exposure})$
 - $$z = \frac{\text{Var}(\mu_2) - \text{Cov}(\mu_1, \mu_2)}{\text{Var}(\mu_1) + \text{Var}(\mu_2) - 2 * \text{Cov}(\mu_1, \mu_2)}$$
- Best estimate: 5.1%



Keeping it real

- Credibility theory by analogy
 - Experience and exposure as two shots at a target
 - Both accurate (unbiased), but imprecise (uncertainty)



- Two shots are observed:



- Where is the most likely location of the bull's-eye?
 - Somewhere between the two, but closer to the green

Implied precision

- Displaying too many digits can detract from your message
 - Visually distracting
 - Implies level of certainty which is probably not intended

Before...			
Accident Year	Premium	Ultimate Losses	Ultimate Loss Ratio
2003	59,644,221	38,823,009	65.09%
2004	65,608,643	45,422,921	69.23%
2005	70,201,248	42,243,316	60.17%
2006	75,115,335	46,467,648	61.86%
2007	80,373,409	51,579,089	64.17%
2008	82,784,611	56,221,207	67.91%
2009	84,440,303	60,156,691	71.24%
2010	85,284,706	61,359,825	71.95%
Projected	85,028,852	59,832,353	70.37%

Implied precision

- How many significant digits?
 - 2 or 3 for summary exhibits and presentations
 - Save the details for supporting documents

Easier to focus
on message:

Stagnating
premium growth

...After			
Accident Year	Premium	Ultimate Losses	Ultimate Loss Ratio
2003	59.6	38.8	65%
2004	65.6	45.4	69%
2005	70.2	42.2	60%
2006	75.1	46.5	62%
2007	80.4	51.6	64%
2008	82.8	56.2	68%
2009	84.4	60.2	71%
2010	85.3	61.4	72%
Projected	85.0	59.8	70%

Deteriorating
loss ratios

(In \$1,000,000's)

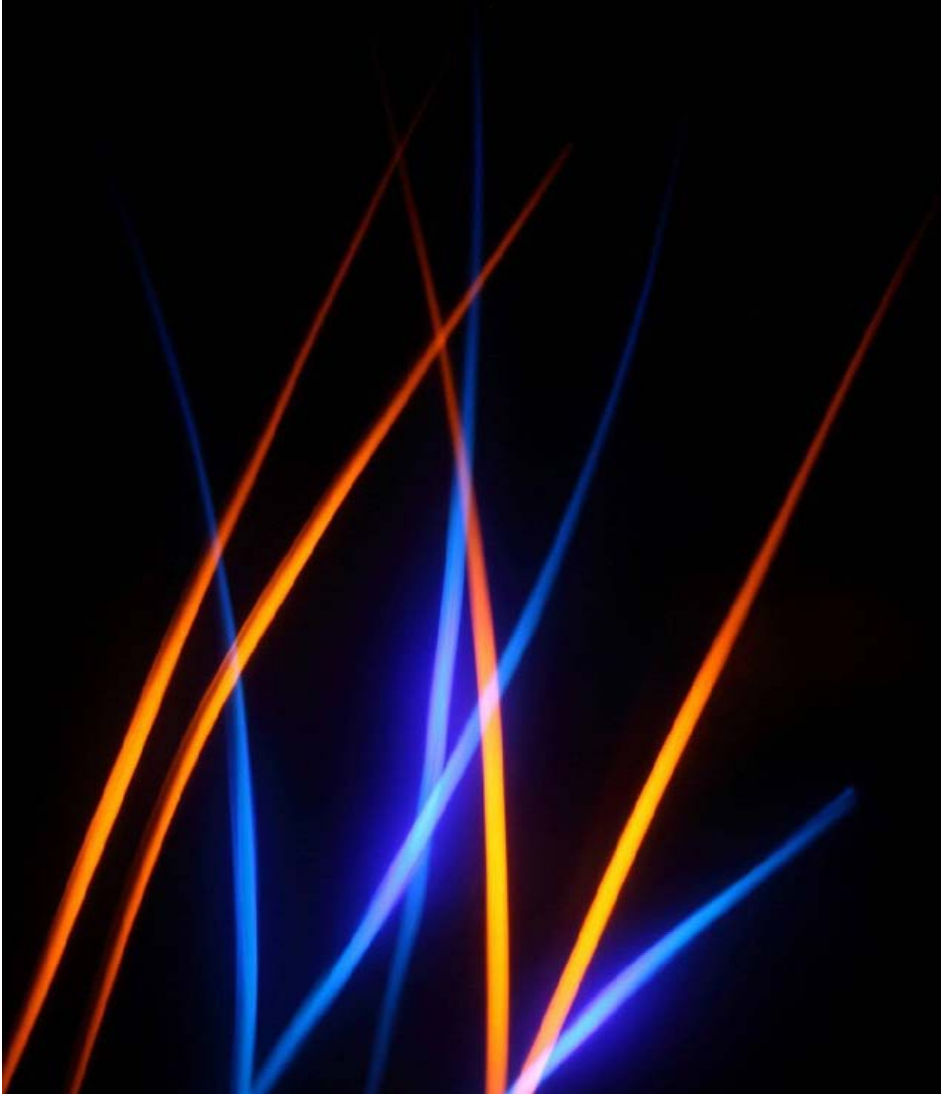
When speaking, *listen*

- Pay attention to what resonates with your audience
 - What do they focus on?
 - Ask open ended questions
- Tailor your message to your audience
 - What you find interesting may not interest them
 - Make sure they feel understood
 - Are you forcing an issue? Is it worth it?

USING POWERPOINT FOR COMMUNICATION

Willis Re

MANAGING EXTREMES

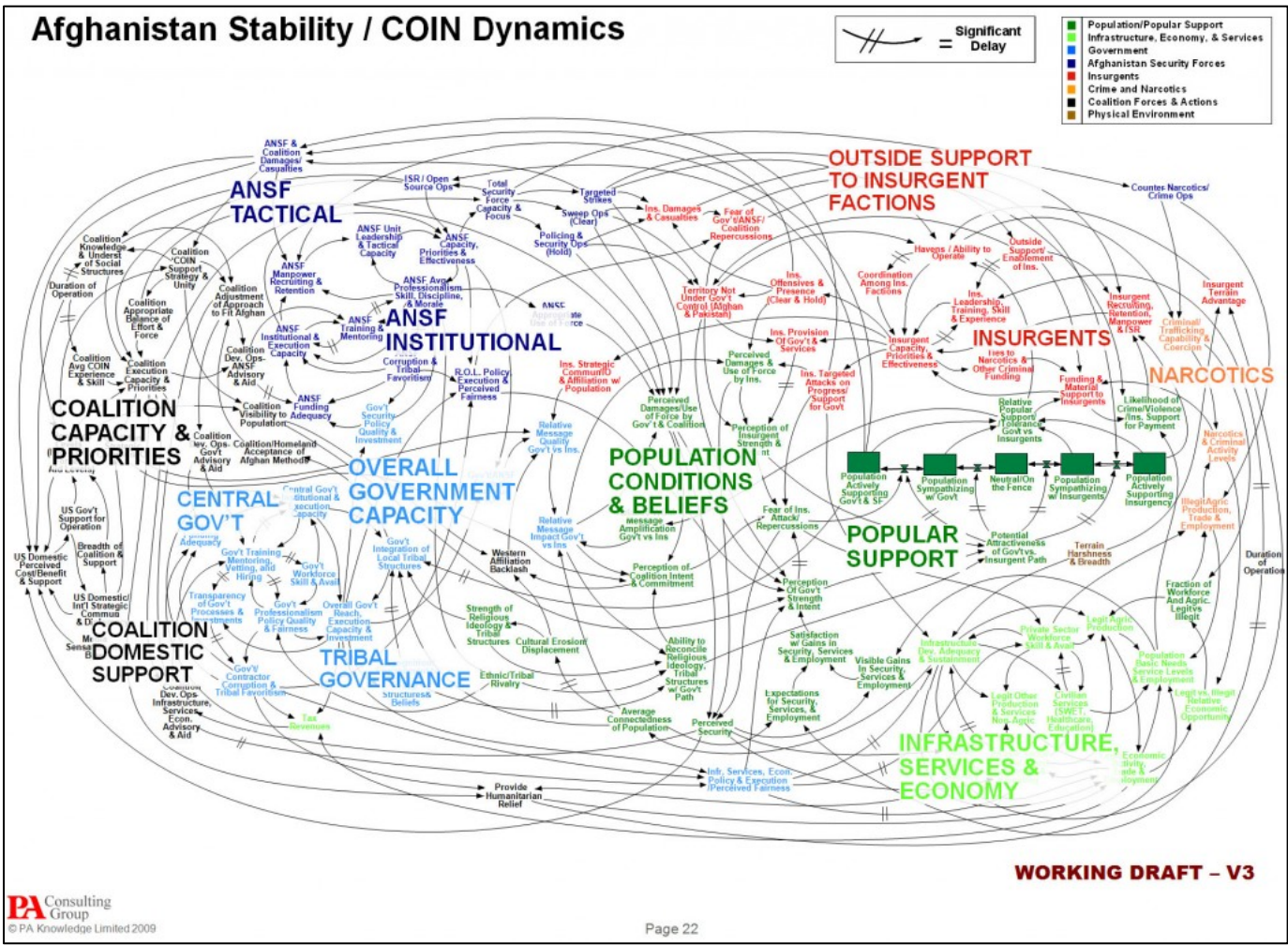


PowerPoint is not the enemy

- It's also not the hero: *you* are!
- PowerPoint can be helpful in conveying meaning
- But used badly, it can
 - Distract from what you're trying to say
 - Confuse your audience, or
 - Put them to sleep

Don't do this...

Afghanistan Stability / COIN Dynamics



Or this...

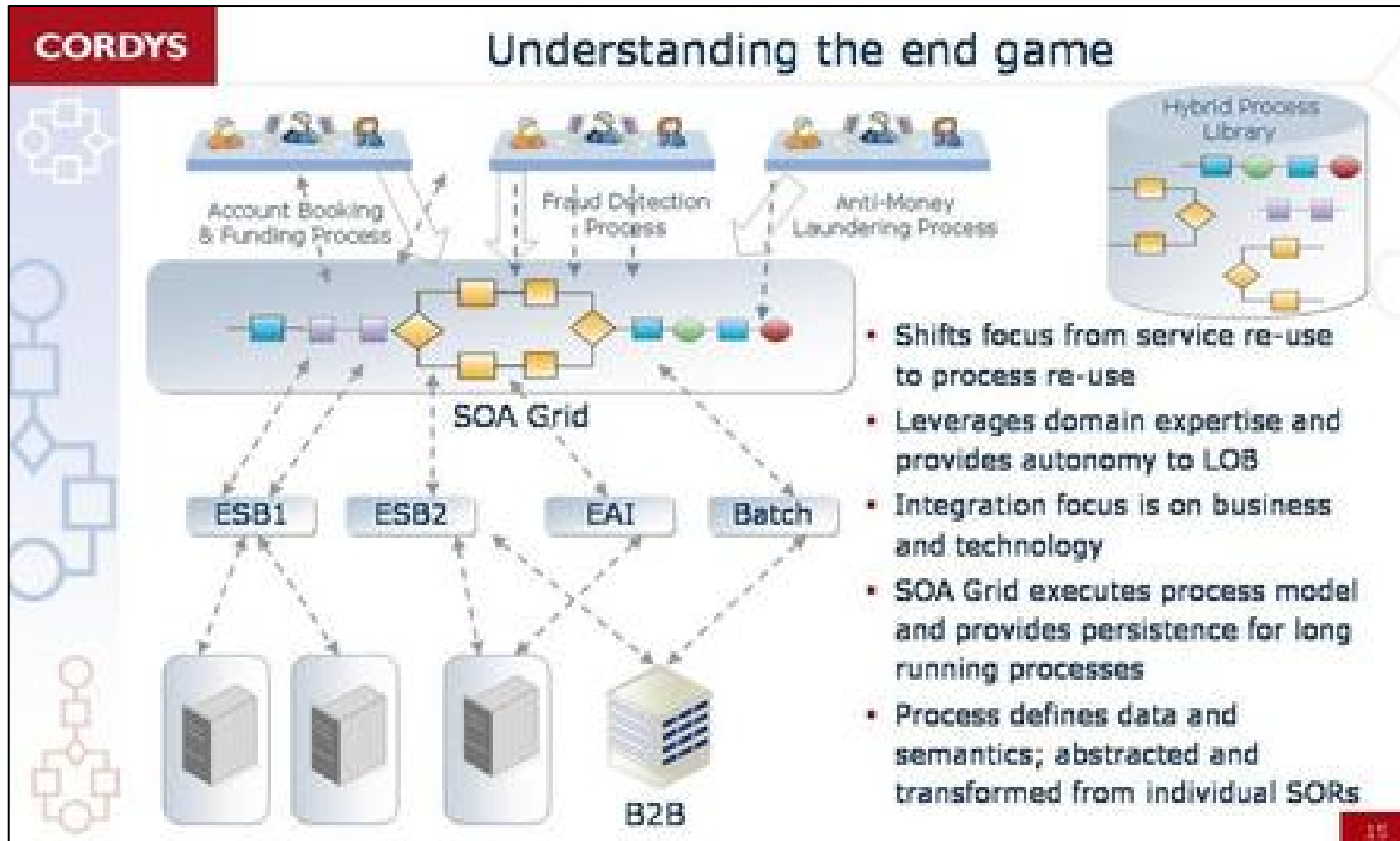
Get in touch with author

The Delegation Temptation

Leaders are understandably tempted to outsource or delegate responsibility for social media initiatives for the following reasons:

- ❑ They are already extremely busy pursuing a host of other priorities and feel unable to add one more thing to their jam-packed To Do lists.
- ❑ They have limited familiarity with social media themselves and have barely begun to climb their own social media learning curves. Consequently, they may not feel qualified to assume a direct leadership role.
- ❑ Their lack of familiarity may also contribute to the perspective that social media initiatives are independent, add-on projects rather than projects that should be integrated into the pursuit of the organization's mission and priorities.
- ❑ Because there are low barriers to accessing and using many social media platforms and tools, as well as a seemingly low financial commitment, they may underestimate the strategic complexity of social media.
- ❑ Underestimating the strategic complexity of social media can lead them to assume the necessary approaches are primarily tactical, an assumption that is reinforced by the widespread emphasis on specific tactics such as blogging, microblogging, and social networking. Consequently, they may conclude these activities can be carved out and handled by someone who's not engaged in core organizational functions.
- ❑ There's no shortage of "hire me!" social media service providers who reinforce the idea that social media activities can easily be outsourced and still produce great results.

Or this...



Or this...

Iraq: I&W of Civil Conflict

CENTRAL COMMAND

Key Reads:

- Political / religious leaders increase public hostile rhetoric
- ▲ Political / religious leaders lose moderating influence over constituents
- Provocative sectarian attacks / assassinations
- Unorganized spontaneous mass civil conflict

Additional Indicators:

- ▲ Militias expand security role
- ▲ Governance
- ▲ Police ineffectual
- Army ineffectual
- Neighbors enable violence
- ▲ Sectarian tensions / violence displace populace
- ↑ Sectarian conflicts between / within ISF forces
- ↓ ISF refuse to take orders from central government, mass desertion
- Kurdish accelerate moves toward secession / annexing Kirkuk
- ◆ Low level violence motivated by sectarian differences

Index of Civil Conflict (Assessed)

↕ CHANGE SINCE LAST WEEK
 ● ROUTINE
 ■ IRREGULAR
 ▲ SIGNIFICANT
 ◆ CRITICAL

Urban areas experiencing “ethnic cleansing” campaigns to consolidate control ... violence at all-time high, spreading geographically.

18 Oct 06

United States Central Command

Another example

Review of Test Data Indicates Conservatism for Tile Penetration

- The existing SOFI on tile test data used to create Crater was reviewed along with STS-87 Southwest Research data
 - Crater overpredicted penetration of tile coating significantly
 - + Initial penetration to described by normal velocity
 - Varies with volume/mass of projectile (e.g., 200ft/sec for 3cu. In)
 - + Significant energy is required for the softer SOFI particle to penetrate the relatively hard tile coating
 - Test results do show that it is possible at sufficient mass and velocity
 - + Conversely, once tile is penetrated SOFI can cause significant damage
 - Minor variations in total energy (above penetration level) can cause significant tile damage
 - Flight condition is significantly outside of test database
 - + Volume of ramp is 1920cu In vs 3 cu in for test



3/21/03

6

- Not as over-the-top as the previous examples
- But still not effective

Jean-Luc Doumont, "The Cognitive Style of PowerPoint: Slides Are Not All Evil," *Technical Communication*; Feb 2005: 52, 1

One way it could be improved

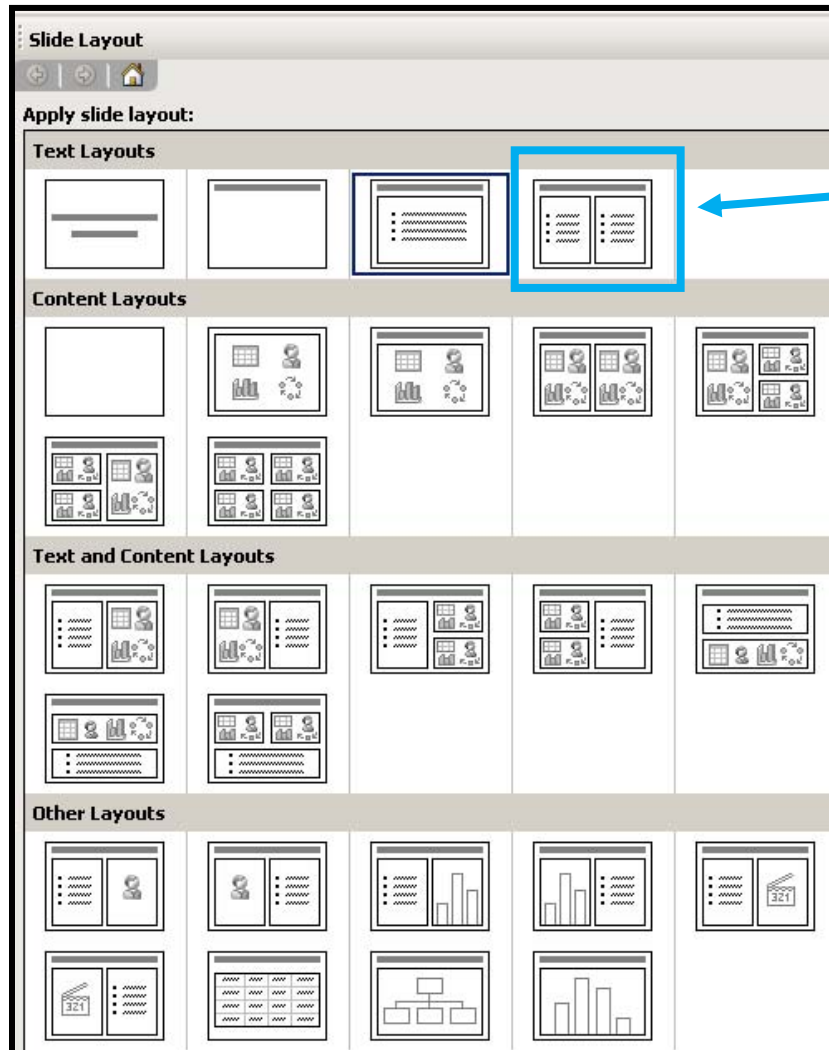
Test data show damage is possible, but test models not applicable

- A SOFI particle can
 - penetrate tile coating at high energy
 - cause major damage after penetration
- Columbia flight is way out of tested range
 - 1920 in³ vs. 3 in³ for tests

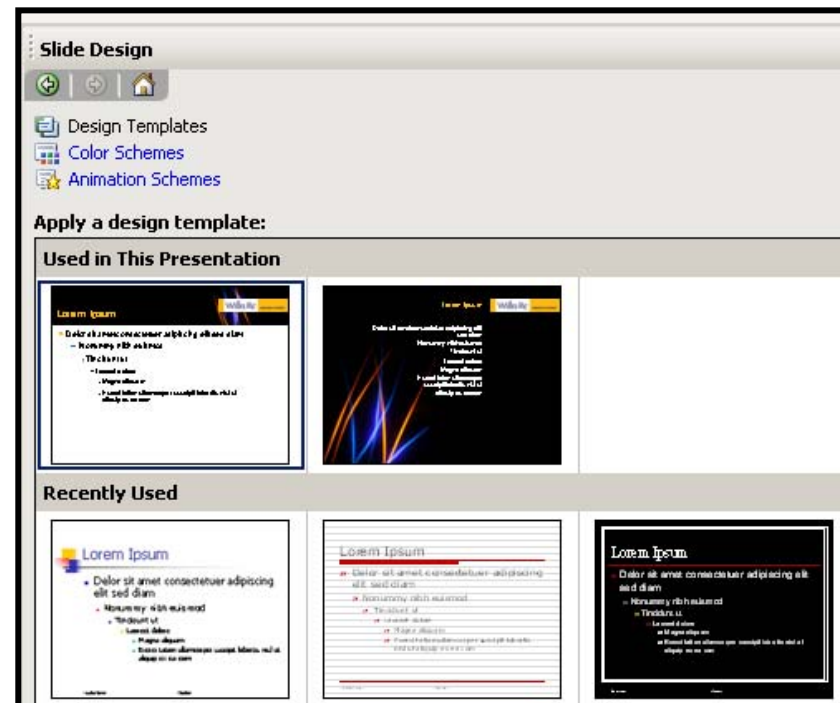
Effective PowerPoint

- Know the point you want to make
 - Use the software to emphasize and enhance
- Know how to use the software itself
 - Masters
 - Toolbars
 - Key commands

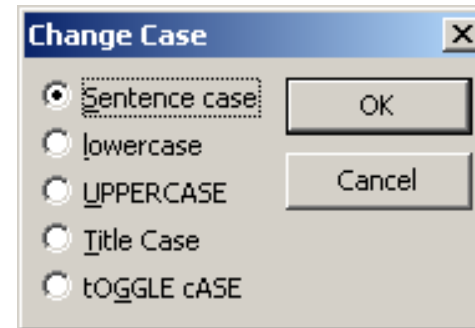
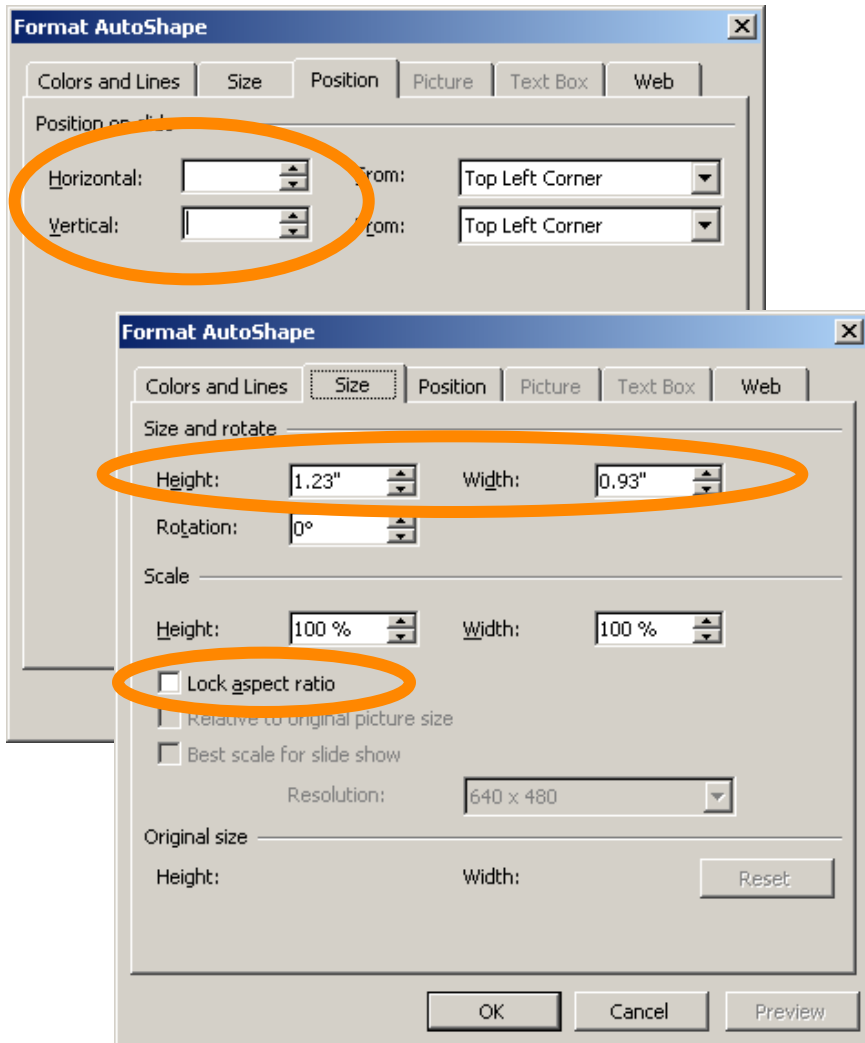
Respect the master!



- Always use title box for slide titles
- If you need a two-column slide, use that slide layout (don't just stick in another text box)

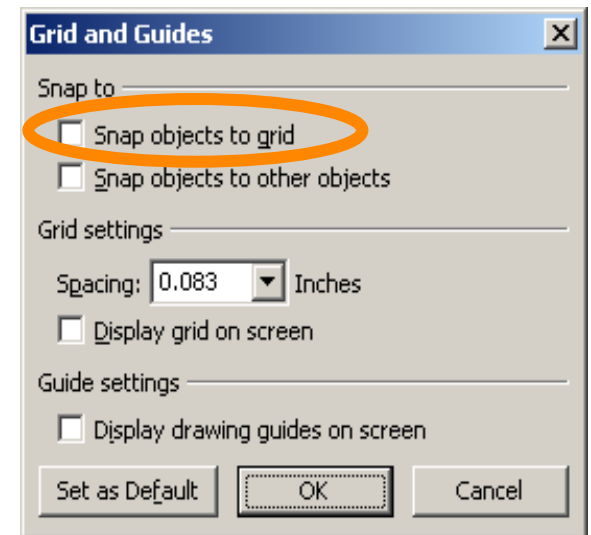


Layout tools



don't re-type!

use shift key to draw lines at 0° / 45° / 90°



Aspect ratio

Don't Torture Your Tables

	Hard	To	Read	Isn't	It?
North	1,235	58.0%	1,235	58.0%	58.0%
South	1,567	62.0%	1,567	62.0%	62.0%
East	5,548	90.0%	5,548	90.0%	90.0%
West	3,574	16.0%	3,574	16.0%	16.0%



- Don't stretch or compress images just to make them fit a certain space!
 - Makes text / numbers hard to read
 - Makes images look strange

Aspect ratio

- Give tables all the space they need
- Break into more than one table / slide if necessary

Don't Torture Your Tables

	Easier	To	Read	Isn't	It?
North	1,235	58.0%	1,235	58.0%	58.0%
South	1,567	62.0%	1,567	62.0%	62.0%
East	5,548	90.0%	5,548	90.0%	90.0%
West	3,574	16.0%	3,574	16.0%	16.0%

- Instead of stretching images, resize while preserving aspect ratio, and **crop** them if needed



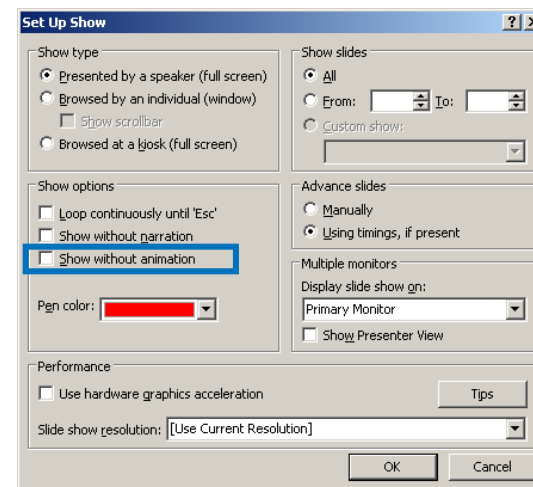
During the show

- While in slideshow mode....
 - B
 - W
 - Slide number + enter

- Above all remember: **you are the protagonist, not the invisible narrator!**

You can turn off animation even after you've started the show

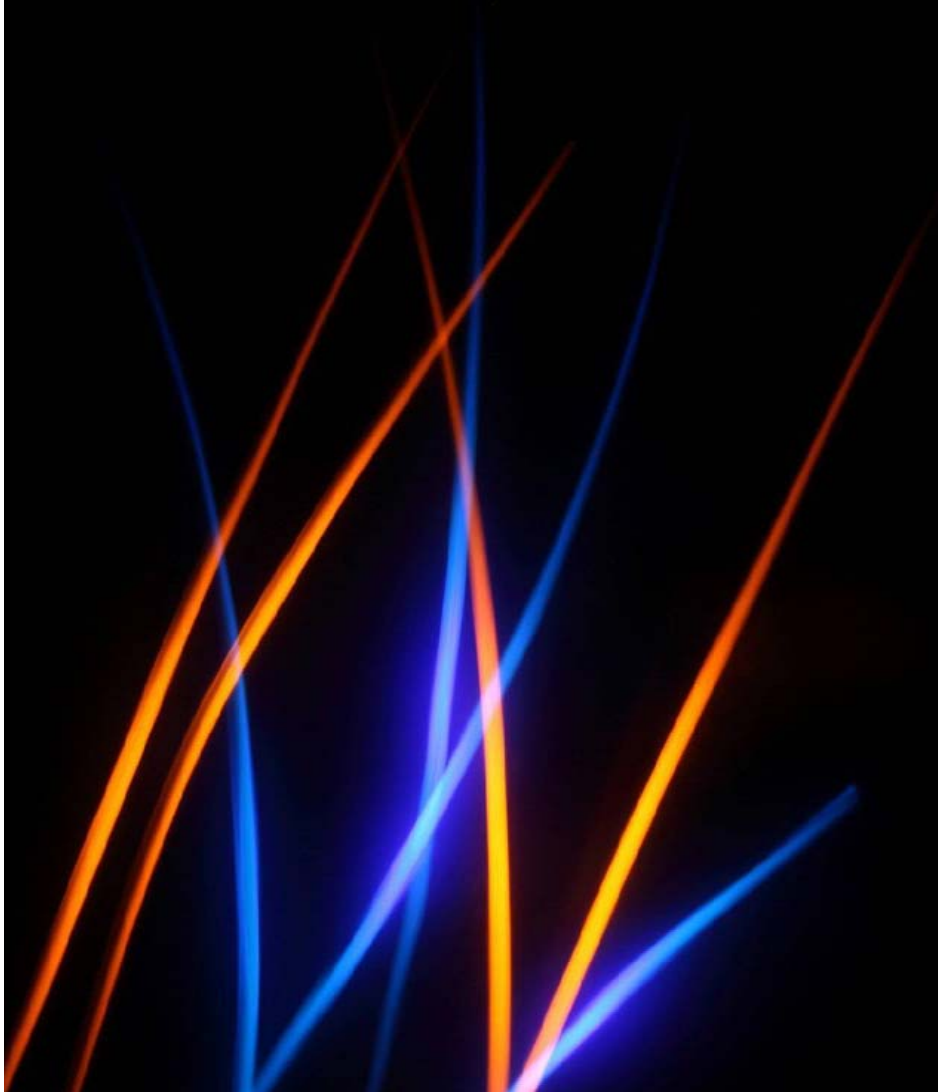
Slide Show
> Set up Show



COMMUNICATING VIA EMAIL

Willis Re

MANAGING EXTREMES



E-mail

- Make only one point per email
 - Keep it **brief**
 - Two points = two emails
- Keep subject line relevant
 - Update it as needed in long threads
- Apply bold sparingly for emphasis
- Use an effective signature

E-mail

Subject: yesterday's discussion

Barney,

I was kind of thinking about the discussion yesterday and more and more I think that tail measures of risk are better for this application than standard deviation. Because the standard deviation is two-sided it is catching the upside variability / volatility as well as the downside and it seems to me that is just not what we are trying to do here. I read a lot of papers about this when I was studying for my actuarial exams and A WHOLE LOT OF THEM argue against using standard deviation as the sole metric for capital allocation.

So I really think that something like Value at Risk or Tail Value at Risk would be a MUCH BETTER WAY TO GO. Can we get together next week to talk about that? I think I am free Tuesday, Thursday, and Friday but I need to check my calendar.... I will get back to you.

Oh by the way I also looked at that reserve study you sent over. I think that the LDF selections that Tabitha made are reasonable so I am fine to go ahead with those numbers.

Alice



!Wherever you go, there you are! -- Yogi Berra

E-mail

Willis Re

MANAGING EXTREMES

Subject: Capital Allocation Method

Barney,

Upon further consideration I think a **tail measure such as VaR or TVAR** would be a better risk measure than SD to use for our capital allocation calculation. Could we set up a time to revisit the issue? I am free in the afternoon on Tuesday March 23, and in the morning Friday March 26.

Please let me know what time works for you.

Thanks,

Alice

Alice Underwood | Executive Vice President | Willis Re Inc. | 212 915 8439 | One World Financial Center | 200 Liberty Street, Third Floor | New York, NY 10281-1003

Subject: GL Reserve Study - Peer review

Barney and Tabitha,

I have reviewed the 2009 GL Reserve Study and find the LDF selections and results to be reasonable. Please proceed with these numbers.

Thanks,

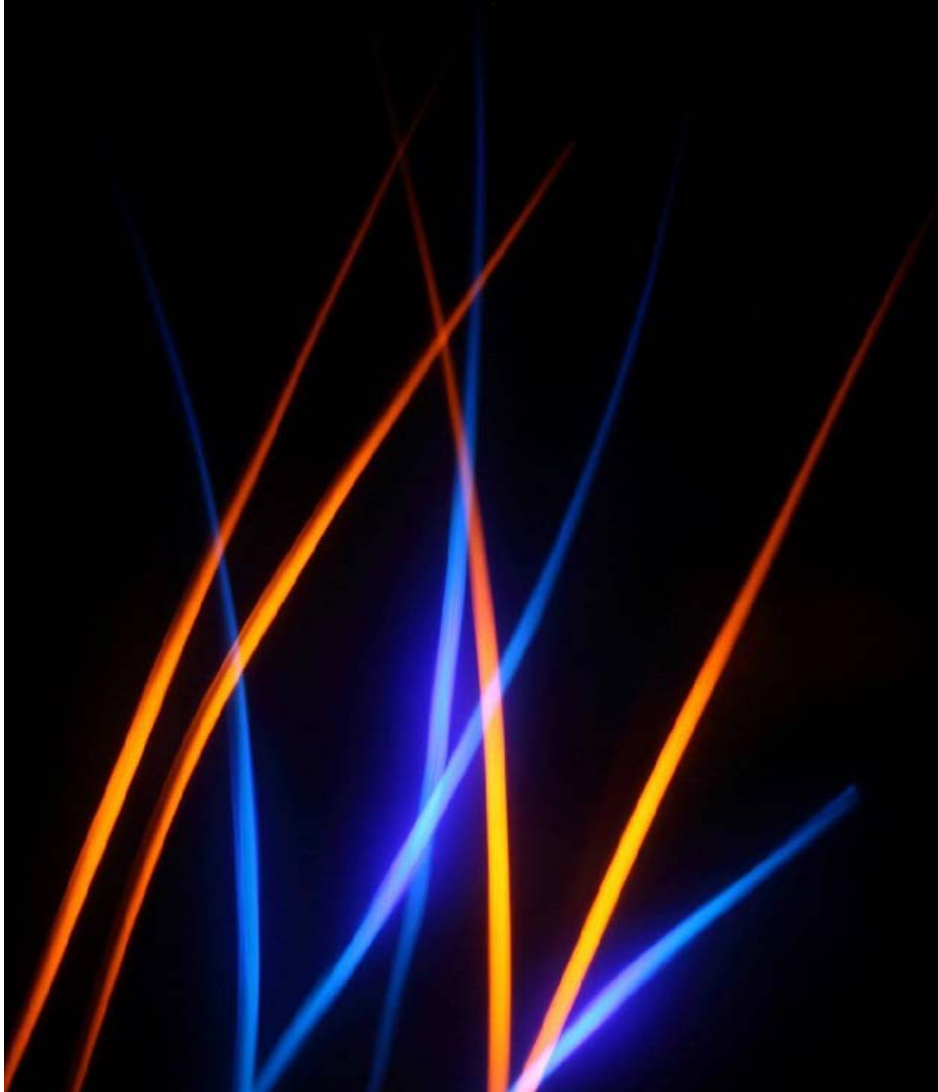
Alice

Alice Underwood | Executive Vice President | Willis Re Inc. | 212 915 8439 | One World Financial Center | 200 Liberty Street, Third Floor | New York, NY 10281-1003

REPORTS AND TECHNICAL PAPERS

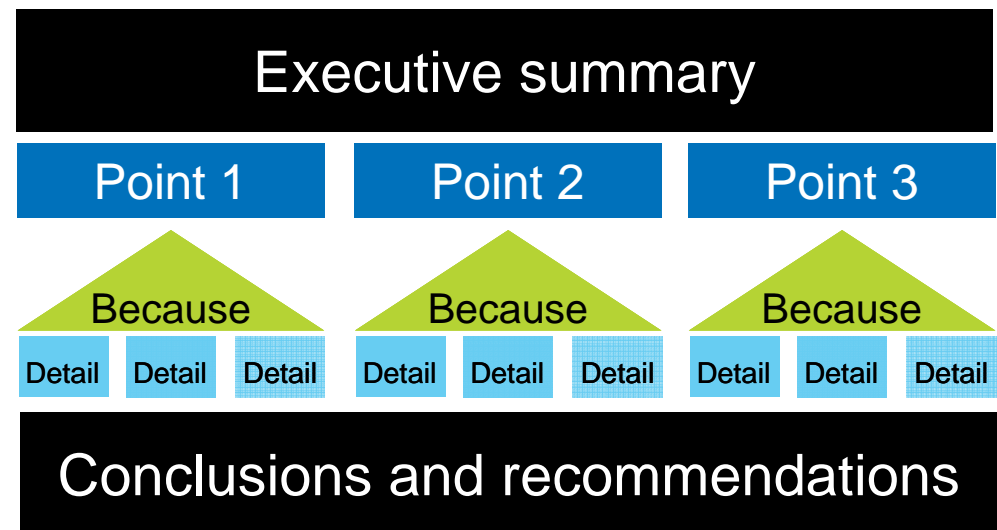
Willis Re

MANAGING EXTREMES



Longer documents

- Don't let the luxury of length make you sloppy
- Readers are just as busy as you are!
- Make it easy for them
 - Organize
 - Summarize
 - Illustrate



Tell them what you're going to tell them...
Tell them...
Then tell them what you told them!

Differences and similarities

- Actuarial reports
 - Often for non-actuaries
 - Must cover required scope
 - Can run hundreds of pages
 - Should convey information, not obfuscate
 - The executive summary is critical
 - Ask yourself: what do they need to know?
- Technical papers
 - Mostly for actuaries
 - You get to determine scope
 - Usually, strict length limits
 - Should convey information, not obfuscate
 - The technical abstract is critical
 - Ask yourself: what do they need to know?

Habits of busy readers

- They don't read straight through
- What gets attention?
 - The initial summary and the final conclusion
 - Section titles
 - Pictures (charts, diagrams) and their captions
 - Bulleted lists

Illustrate your thoughts

- Diagrams and sketches make concepts more lucid
- An actuary will be able to grapple with this:
- But it's much more clear when followed by this:

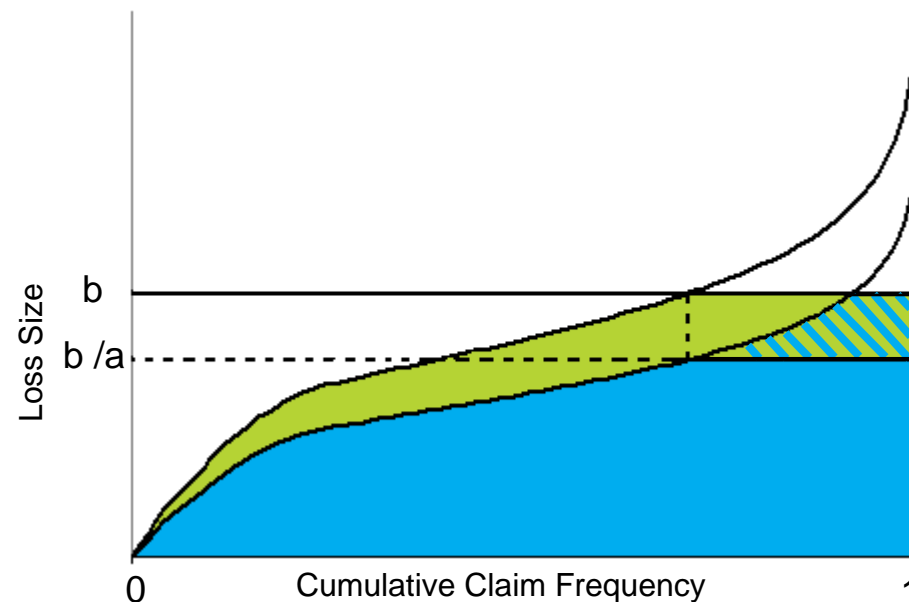
$$E \{g (X'; b)\} = a E\{g (X; b/a)\}$$

where

$$g (X; k) = \begin{cases} X & \text{if } 0 < X \leq k \\ k & \text{if } k < X \end{cases}$$

and $x' = a(x)$

The Effect of Inflation on Basic Limit Losses



Yoong-Sin Lee, "The Mathematics of Excess of Loss Coverages and Retrospective Rating – A Graphical Approach", *Proceedings of the Casualty Actuarial Society*, 1988

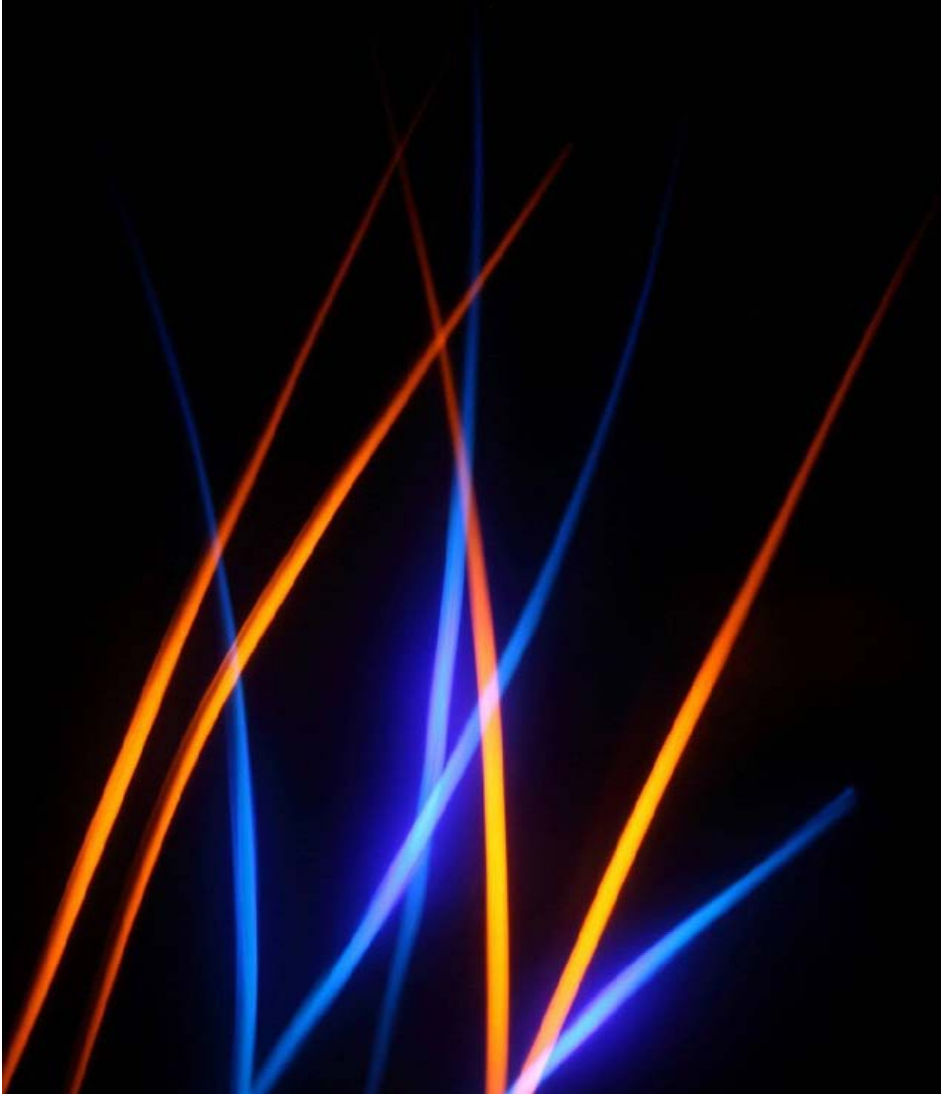
Make it easy for them

- Put **all** the key points (we hope no more than 3!) in the initial summary and **repeat** them in the conclusion
 - Note: 2 ideas = 2 technical papers!
- Section titles should “speak”
- Use charts / diagrams and their captions to illustrate (only) the crucial ideas
- Keep it snappy!

COMMUNICATION: CONCLUSION

Willis Re

MANAGING EXTREMES



Conclude with a conclusion (or maybe a question)

- Not just a bunch of data
- Not just a bunch of calculations
- Conclude with a conclusion:
 - Make a recommendation
 - Provisional conclusion may be OK
- Conclude with a question:
 - What do you prefer?
 - Where do you want to take this?

Focus on your audience

- What's in it for them?
- What do you want them to “take away”?
- What context will help them “get it”?

Disclaimer

- This analysis has been prepared by Willis Limited and/or Willis Re Inc (“Willis Re”) on condition that it shall be treated as strictly confidential and shall not be communicated in whole, in part, or in summary to any third party without written consent from Willis Re.
- Willis Re has relied upon data from public and/or other sources when preparing this analysis. No attempt has been made to verify independently the accuracy of this data. Willis Re does not represent or otherwise guarantee the accuracy or completeness of such data nor assume responsibility for the result of any error or omission in the data or other materials gathered from any source in the preparation of this analysis. Willis Re, its parent companies, sister companies, subsidiaries and affiliates (hereinafter “Willis”) shall have no liability in connection with any results, including, without limitation, those arising from based upon or in connection with errors, omissions, inaccuracies, or inadequacies associated with the data or arising from, based upon or in connection with any methodologies used or applied by Willis Re in producing this analysis or any results contained herein. Willis expressly disclaims any and all liability arising from, based upon or in connection with this analysis. Willis assumes no duty in contract, tort or otherwise to any party arising from, based upon or in connection with this report, and no party should expect Willis to owe it any such duty.
- There are many uncertainties inherent in this analysis including, but not limited to, issues such as limitations in the available data, reliance on client data and outside data sources, the underlying volatility of loss and other random processes, uncertainties that characterize the application of professional judgment in estimates and assumptions, etc. Ultimate losses, liabilities and claims depend upon future contingent events, including but not limited to unanticipated changes in inflation, laws, and regulations. As a result of these uncertainties, the actual outcomes could vary significantly from Willis Re’s estimates in either direction. Willis makes no representation about and does not guarantee the outcome, results, success, or profitability of any insurance or reinsurance program or venture, whether or not the analyses or conclusions contained herein apply to such program or venture.
- Willis does not recommend making decisions based solely on the information contained in this report. Rather, this report should be viewed as a supplement to other information, including specific business practice, claims experience, and financial situation. Independent professional advisors should be consulted with respect to the issues and conclusions presented herein and their possible application. Willis makes no representation or warranty as to the accuracy or completeness of this document and its contents.
- This analysis is not intended to be a complete actuarial communication. A complete communication can be provided upon request. Willis Re actuaries are available to answer questions about this analysis.
- Willis does not provide legal, accounting, or tax advice. This analysis does not constitute, is not intended to provide, and should not be construed as such advice. Qualified advisers should be consulted in these areas.
- Willis makes no representation, does not guarantee and assumes no liability for the accuracy or completeness of, or any results obtained by application of, this analysis and conclusions provided herein.
- Where data is supplied by way of CD or other electronic format, Willis accepts no liability for any loss or damage caused to the Recipient directly or indirectly through use of any such CD or other electronic format, even where caused by negligence. Without limitation, Willis shall not be liable for: loss or corruption of data, damage to any computer or communications system, indirect or consequential losses. The Recipient should take proper precautions to prevent loss or damage – including the use of a virus checker.
- This limitation of liability does not apply to losses or damage caused by death, personal injury, dishonesty or any other liability which cannot be excluded by law.
- Acceptance of this document shall be deemed agreement to the above.