



2019 **ANNUAL  
MEETING**  
& EXHIBIT

October 27-30  
Toronto, Canada

## Session 154: From 'Command & Control' to 'Cruise Control': Extracting Analytical Insight from Your Existing Risk Management and Control Activities

[SOA Antitrust Compliance Guidelines](#)

[SOA Presentation Disclaimer](#)

# Session 154: From 'Command & Control' to 'Cruise Control': Extracting Analytical Insight from Your Existing Risk Management and Control Activities

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30 October 2019



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Effective controls  
as part of a company's risk management  
and financial reporting process



# 2019 ANNUAL MEETING

OCTOBER 29, 2019

Erzhe Zhang, FSA MAAA

Session 154: From 'Command & Control' to 'Cruise Control'

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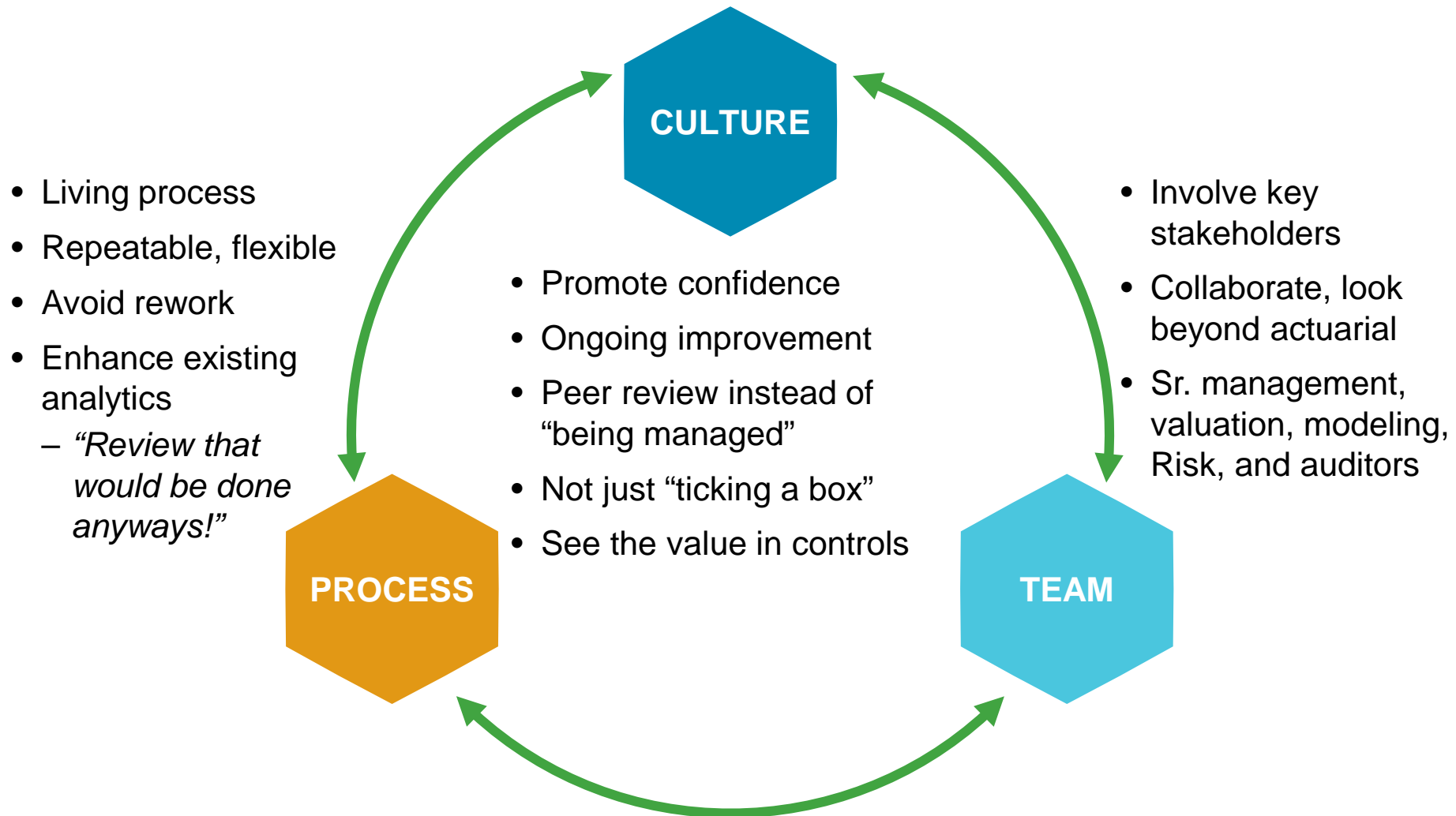
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*“Best practice is to not make mistakes.”*

~Erzhe's boss



# Effective controls are designed as part of a company's risk management and financial reporting process



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# Case Study: Elevated Control Initiative

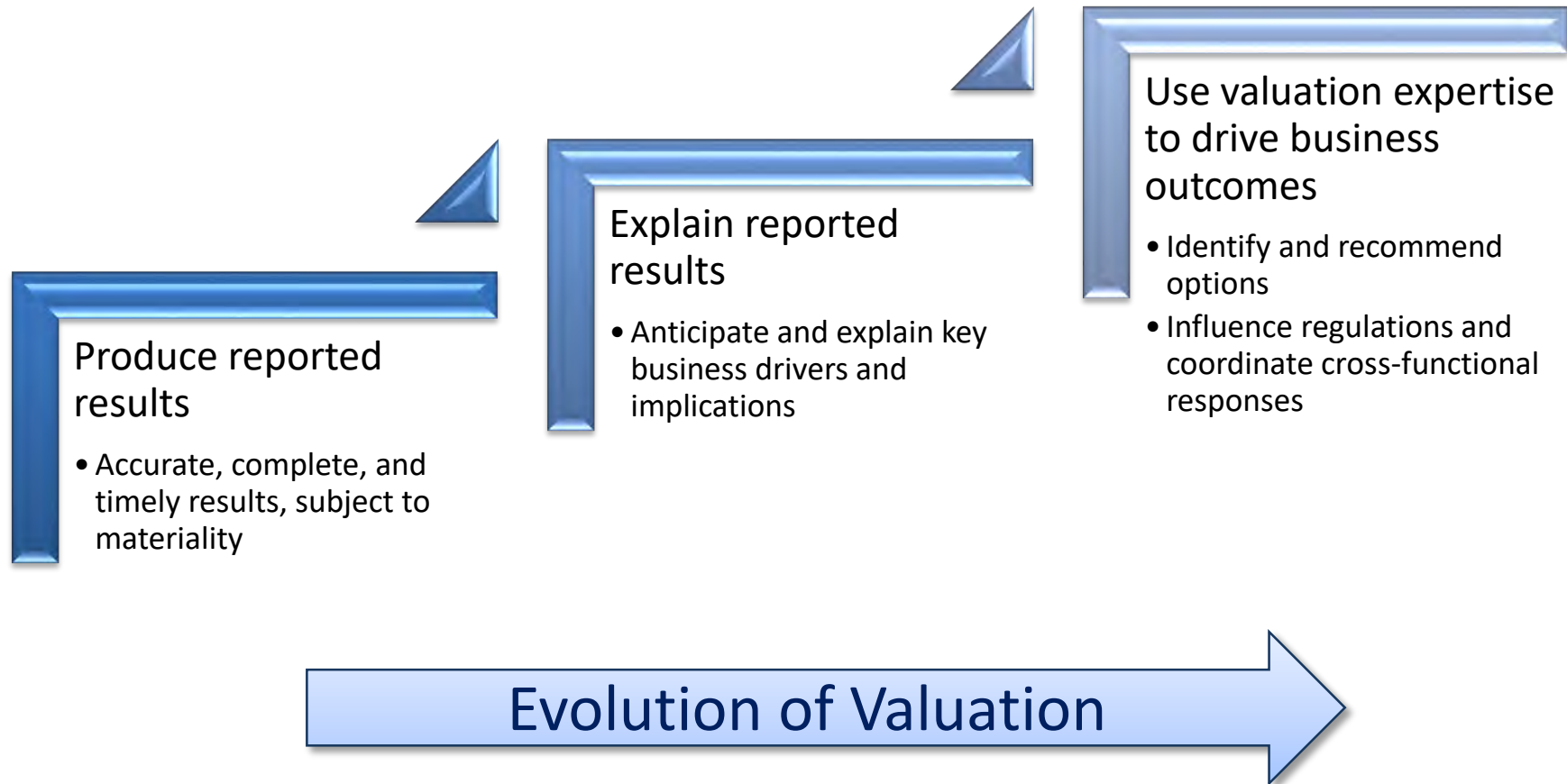


# Case Study:

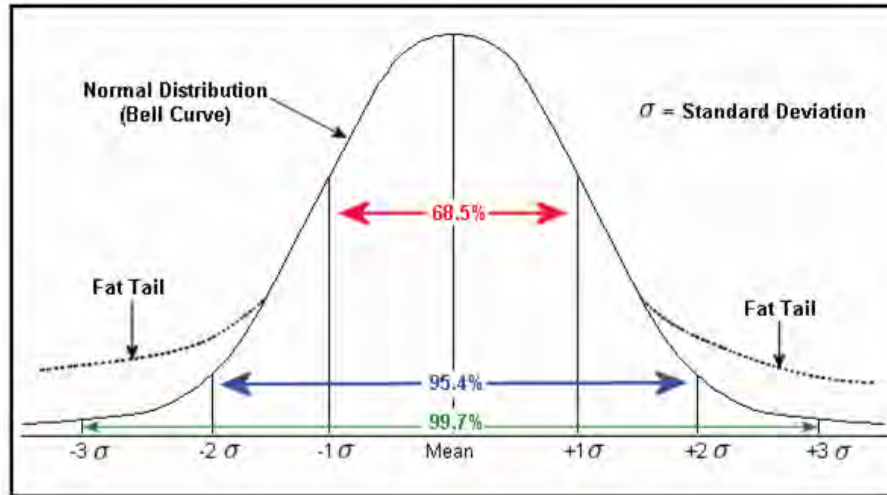
## Elevated Control Initiative

- Valuation Objectives
- Driving Changes in How We Spend Our Time
- Elevated Control Initiative Background
- Action Taken
  - Inventory of Controls
  - Annuities Elevated Evidence Standard
- Benefits of Elevated Controls
- Creating Thresholds
- Testimonials
- Recognition of Efforts & Final Remarks

# Valuation Objectives: How We Spend Our Time



# Elevated Control Initiative: Background



*to leader of the pack!*

*From behind the curve...*



# Action Taken



TAKE ACTION



# Why are we doing this?



Efficiency

“Delegate-able”

Reproducibility

Self-Evidencing

The V-Factor\*

Powerball Protection

Clarity

\* Vacation!!



# Inventory of Controls



The Annuities Actuarial Team created an inventory of Annuities DAC control processes in scope for enhanced evidence of management review.

## Step 1

- Establish the Universe

## Step 2

- Specify Criteria

## Step 3

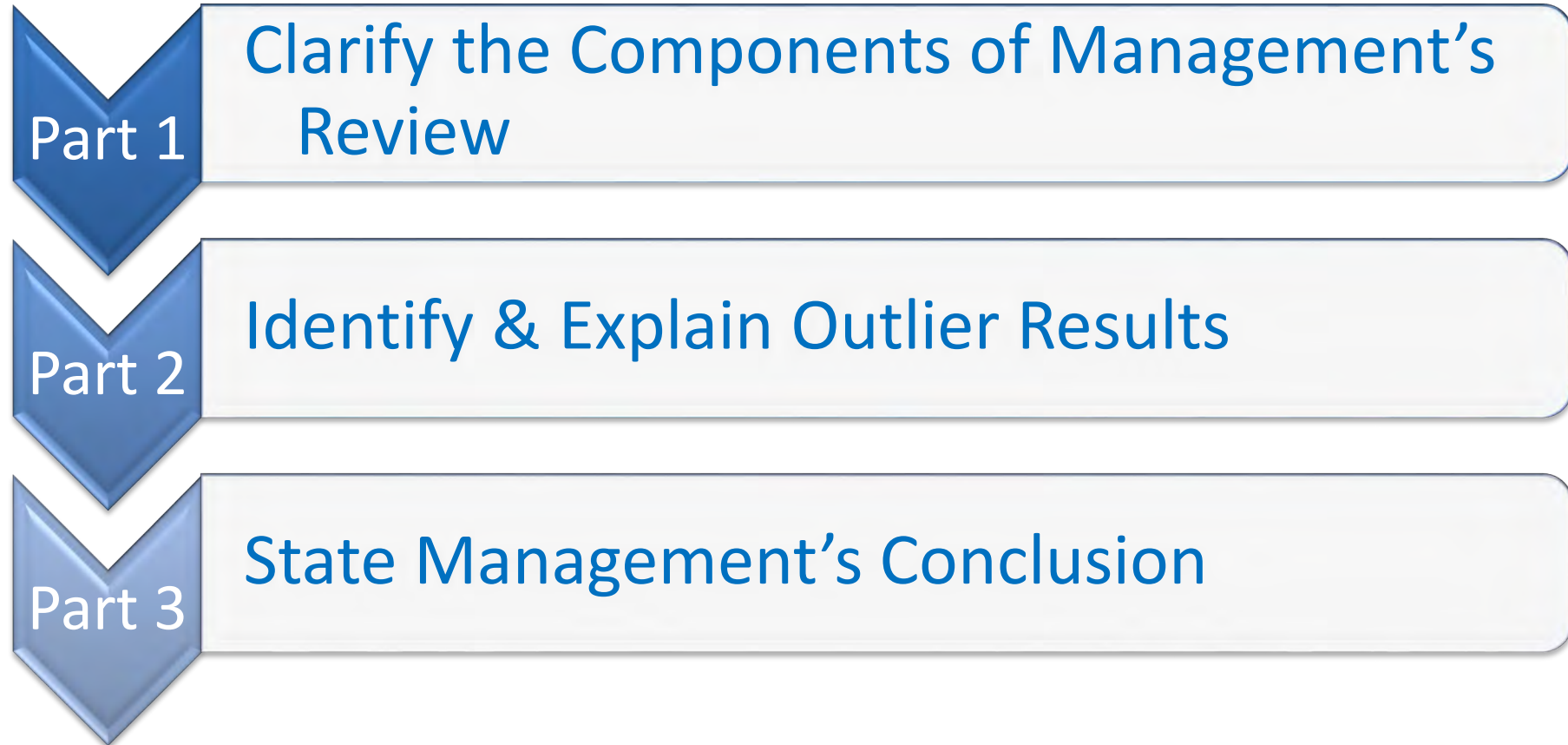
- Apply the Criteria / Define the Inventory



# Annuities Elevated Evidence Standard



The Annuities Elevated Evidence Standard was defined to include the following:



# Clarify Management's Thought Process



## What am I expecting to see?

Use an Algorithm.\*  
Avoid PDE's and  
Cubic Splines  
(where possible).

## Set a threshold (Don't panic!)

Be honest.  
Don't overthink it /  
avoid lockup.  
Consider entire  
control framework.

## Explain All Outliers

Use the expectation  
& threshold as a  
test to identify  
outliers.  
Transparency is key.

\* Culture-shift alert: Celebrate early adopters!

# Benefits of Elevated Controls



Enhanced Risk Management

Guardrails

Process Improvement

Reduction in Audit Walkthrough Time

Reduction in FACT Review



# Creating Thresholds: Trend Analysis



Trend_Reserves_Consolidated									
2018-09									
\$ in 000's	Q3-2018	Q2-2018	Q1-2018	Q4-2017	Q3-2017	Q2-2017	Q1-2017	Q4-2016	
<b>Implied Net Benefit Ratio (Locked)</b>									
GMDB - AOI	2.4%	2.5%	2.8%	2.7%	3.0%	3.0%	5.3%	5.4%	
GMIB - AOI	0.02%	0.0%	0.2%	0.4%	0.5%	0.5%	0.8%	0.8%	
GMDB - GAAP	3.0%	3.1%	3.3%	3.1%	3.3%	3.5%	3.7%	3.7%	
GMIB - GAAP	0.03%	0.0%	0.3%	0.4%	0.5%	0.6%	0.5%	0.5%	
<b>Implied interest rate</b>									
GMDB	4.71%	4.76%	4.79%	4.80%	4.84%	4.88%	4.83%	4.84%	
GMIB	3.20%	3.24%	2.19%	1.86%	2.47%	1.62%	5.15%	5.12%	
Upper and lower Threshold are setup									
	Q3-2018	Q2-2018	Q1-2018	Q4-2017	Q3-2017	Q2-2017	Q1-2017		
<b>Variance in Quarterly Trend</b>	<b>Threshold Range: 0.5%</b>		<b>-0.5%</b>	<b>(1% of AOI/GAAP Revenue ~ \$10M)</b>					
<i>Implied Net Benefit Ratio:</i>									
GMDB - AOI	-0.1%	-0.2%	0.1%	-0.3%	-0.1%	-2.2%	-0.1%		
GMIB - AOI	0.0%	-0.2%	-0.1%	-0.2%	0.0%	-0.3%	0.0%		
GMDB - GAAP	-0.1%	-0.2%	0.1%	-0.2%	-0.2%	-0.2%	-0.1%		
GMIB - GAAP	0.0%	-0.2%	-0.1%	-0.2%	-0.1%	0.1%	0.0%		
<b>Implied interest rate</b>									
	<b>Threshold Range: 1.5%</b>		<b>-1.5%</b>	<b>(1% of AOI/GAAP Revenue ~ \$10M)</b>					
GMDB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
GMIB	-0.04%	1.05%	0.33%	-0.61%	0.86%	-3.54%	0.03%		

Threshold created based on the magnitude of an error

Conditional formatting is created to highlight the outliers

Newly created Section to support Elevated Controls

This section shows the variance between two quarters

# Creating Thresholds: Avg. of 10 Qtrs.



2018-12														
AGP including VOBA & VOBA2003														
\$ in 000's		Q4-2018	Q3-2018	Q2-2018	Q1-2018	Q4-2017	Q3-2017	Q2-2017	Q1-2017	Q4-2016	Q3-2016	Q2-2016		
AOI Gross Profit		760,000	800,000	810,000	820,000	830,000	810,000	760,000	710,000	750,000	700,000	680,000		
Quarterly AGP Variance		(40,000)	(10,000)	(10,000)	(10,000)	20,000	50,000	50,000	(40,000)	50,000	20,000			
Absolute value of Quarterly AGP Variance		40,000	10,000	10,000	10,000	20,000	50,000	50,000	40,000	50,000	20,000			
Threshold: Average of absolute value of past 10 Quarters			30,000	Threshold created based on the average absolute variance from the last ten quarters										
Threshold range		(30,000)	30,000											

# Testimonials



## Our Testimonials



*"Elevated Controls is helping us with the oversight groups. The Elevated Controls in the VIP AGP process is helping us strengthen our relationship with Finance and FSS. FSS provides us with some of the AGP data and Finance helps review this data. However, Elevated Controls helped highlight items that are very different than expected and some of these items were not caught by Finance. This helped bring tighter controls to FSS and strengthen Finance's review and understanding of AGP items."*

*"This type of elevated controls enables our Valuation team to forecast the market true-up and its components. This aids us in the case of volatile markets, when management is keen to obtain a high-level picture of results early on. Furthermore, our auditors didn't need to follow up with questions, thus saving time."*

# Recognition of Efforts & Final Remarks





# Discussion / Q&A

