



# Agenda

- ✦ Brief background
- ✦ Calibration exercises
- ✦ Eliciting probabilities
- ✦ Conducting forecasts

# State of Security World

- ✦ “We need more data”
- ✦ “You can’t quantify (risk)”
- ✦ “Security is too complex”
- ✦ Yada yada yada...

# Four Useful Measurement Assumptions

- ✦ Your problem is not as unique as you think.
- ✦ You have more data than you think.
- ✦ You need less data than you think.
- ✦ There is useful measurement that is much simpler than you think.

# Calibration Exercise

- ✦ Consider the question
- ✦ Identify related information that provides useful insight
- ✦ Record the upper and lower bound responses for a 90% level of confidence (i.e. out of 10 questions, you will get 1 wrong)
- ✦ Record the interval size (upper – lower)

# Exercise Number 1: Trivia

1	What year was Albert Einstein born?	
2	What was the average speed (mph) for the winner of 2010's Daytona 500?	
3	How many teeth does an adult human (with all of their teeth) have?	
4	How many countries are there in Africa?	
5	How many calories are in a McDonald's Big Mac?	
6	How tall (in feet) is the largest pyramid – the Great Pyramid of Giza?	
7	What is the world's population?	
8	How many elements are found naturally on Earth?	
9	How many companies are listed on the NYSE?	
10	How many circles of hell are there in Dante's Divine Comedy?	

# Marbles in the Urn

- ✦ There are 100 marbles in an urn.
- ✦ 90 are white; 10 are blue.
- ✦ I have \$1,000 to give you if a) your answer is correct; or b) you pick a white marble out of the urn.
- ✦ Which option do you choose?

# Exercise Number 1: Trivia

1	What year was Albert Einstein born?	1879
2	What was the average speed (mph) for the winner of 2010's Daytona 500?	147
3	How many teeth does an adult human (with all of their teeth) have?	32
4	How many countries are there in Africa?	53
5	How many calories are in a McDonald's Big Mac?	540
6	How tall (in feet) is the largest pyramid – the Great Pyramid of Giza?	455
7	What is the world's population?	6.8b
8	How many elements are found naturally on Earth?	94
9	How many companies are listed on the NYSE?	2773
10	How many circles of hell are there in Dante's Divine Comedy?	9

# Quick Quiz

- ✦ How many people changed their answers?

# Exercise Number 2: Tech-Sec

1.	How many total vulnerabilities are in the National Vulnerability Database?	
2.	How many Visa transactions were processed in 2009?	
3.	How many websites are on the Internet as of Jan 2010?	
4.	How many authentication exhibitors are at RSA 2010?	
5.	What is the average number of friends for users on Facebook?	
6.	How many incidents were reported by DatalossDB in 12/09?	
7.	How many pages are in the PCI-DSS v. 1.2.1 pdf version?	
8.	How many members were there in L0pht heavy industries?	
9.	How many TOR relays are there (Torproject.org)?	
10	What year did the movie "Sneakers" come out?	

# Exercise Number 2: Tech-Sec

1.	How many total vulnerabilities are in the National Vulnerability Database?	40,837
2.	How many Visa transactions were processed in 2009?	62b
3.	How many websites are on the Internet as of Jan 2010?	207.3m
4.	How many authentication exhibitors are at RSA 2010?	35
5.	What is the average number of friends for users on Facebook?	130
6.	How many incidents were reported by DatalossDB in 12/09?	26
7.	How many pages are in the PCI-DSS v. 1.2.1 pdf version?	74
8.	How many members were there in L0pht heavy industries?	7
9.	How many TOR relays are there (Torproject.org)?	1755
10	What year did the movie "Sneakers" come out?	1992

# Estimates and Forecasts

1.	How many vulnerabilities will be discovered/disclosed in Windows 7 between 2010 and 2012?
2.	What percent of all attack attempts will client antivirus block?
3.	How many “white hat” researchers are there in the world?
4.	How many “black hat” researchers are there in the world?
5.	What is the chance that a randomly selected global 2000 PC will be infected by malware?
6.	On average, what % of Internet connections are malicious?
7.	What is the likelihood that a single “global 2000” company will go out of business due to a cybersecurity breach in the next 5 years?
8.	What is the likelihood that a cybersecurity breach will lead to the death of one or more individuals in the next 5 years?
9.	What percent of all attack attempts against an entity will the average firewall block?
10.	What is the chance that a randomly selected global 2000 PC will be infected by malware?

# Eliciting Probabilities from Words

	<b>What is the % range for the word:</b>
1.	Probable
2.	Unlikely
3.	Almost Certain
4.	Possible
5.	Likely
6.	Improbable

# Risk Matrix

<b>H</b>			
<b>M</b>			
<b>L</b>			
	<b>L</b>	<b>M</b>	<b>H</b>



*Your feedback is essential!*

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