

Communicating with Non-Actuaries

Commitment Beyond Numbers



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About the Presenter – Joseph A. Herbers

- Managing Principal
- Presentations to Boards of Directors approaching 100
- 29 years consulting experience
- Member of Casualty Actuarial Society (CAS) and American Academy of Actuaries (AAA)
- Chartered Enterprise Risk Analyst (CERA)
- Member of AAA Committee on Property and Liability Financial Reporting (COPLFR) for 13 years
- Faculty for AAA Seminar on Effective Loss Reserve Opinions
- Appointed Actuary for 20+ companies in 2013.2
- Author of paper on Materiality and SAOs (2004)
- Extensive interaction with captive managers, auditors, brokers, TPAs, regulators, lawyers and company mgmt.



About the Presenter – Doug Hayden

- Senior Vice President
- Captive Resources LLC, Schaumburg, IL – 15 years
- Michigan State University
- 27 years insurance experience (commercial property, casualty, WC and employee benefits)



Outline of Presentation

- Nature of Actuarial Assignments
- Relationship between Actuary and Company Management / Board of Directors
- Nature of Communications
- Expectations from your Actuary
- Questions You Should Ask

Nature of Actuarial Assignments

- Loss Reserve Analysis
- Rate Studies
- Funding Studies
- Retention Level / Reinsurance Analysis
- Risk Transfer Analysis
- Competitive Analysis

Quiz

Which statements are true?

IBNR reserves are:

- a) Objectively determined via actuarial formulas using loss development triangles and other methods with odd sounding names
 - b) Real
 - c) Significant
 - d) Fungible
 - e) Dependent on impact of real world operational changes
-
- | | |
|---------------------|----------------------|
| 1) All of the Above | 2) None of the Above |
| 3) (e) | 4) All but (a) |

Trying to understand Actuaries

- Reports/presentations filled with jargon, assumptions, caveats and complexity
- Reports are long on exhibits and technical presentation but short on narrative
- Poor communication skills
- Introverted personality
- Unduly pessimistic
- Heavy focus on numbers side of business

Relationship between Actuary and Company

Employee / Consultant
Independence
Auditor

- Potential Conflicts of Interest
- Trusted Advisor or Advocate?
- Pessimistic / Optimistic Viewpoints
- Are member of BOD insurance professionals?
 - Captives
 - Traditional Insurers

BOD Members with little/no knowledge of insurance

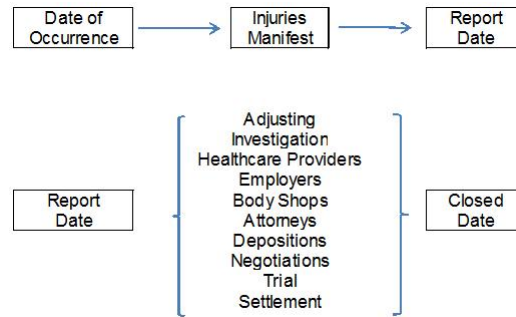
- Primary challenge for actuary is one of communication
- Audience respects the actuary's technical skills but likely will not understand actuarial concepts of
 - Loss Development / IBNR
 - Earned v Unearned Premiums
 - Reinsurance, etc.

BOD Members with little/no knowledge of insurance

- Describe the fundamental nature of what actuaries do
 - *Predict the future*
- Describe the fundamental nature of insurance business (lags)
- Using client data, prove that IBNR is both real and significant
- Discuss reliability of client specific data in our analysis
- Use illustrations to communicate process , assumptions and conclusions

Lags

- Property/Casualty insurance business is characterized by lags (which give rise to need for IBNR)



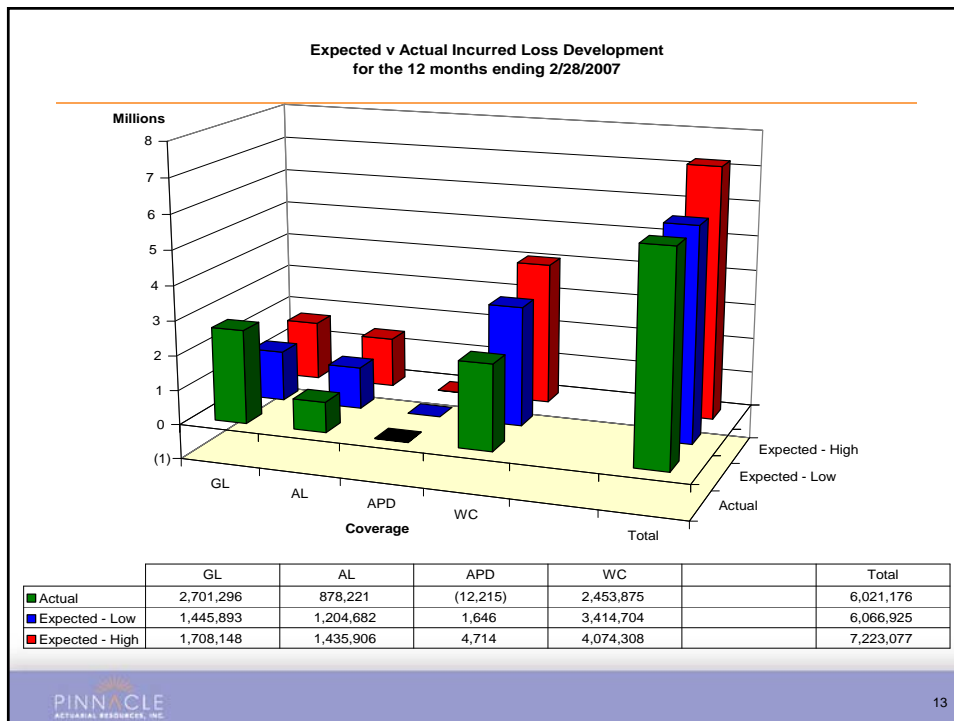
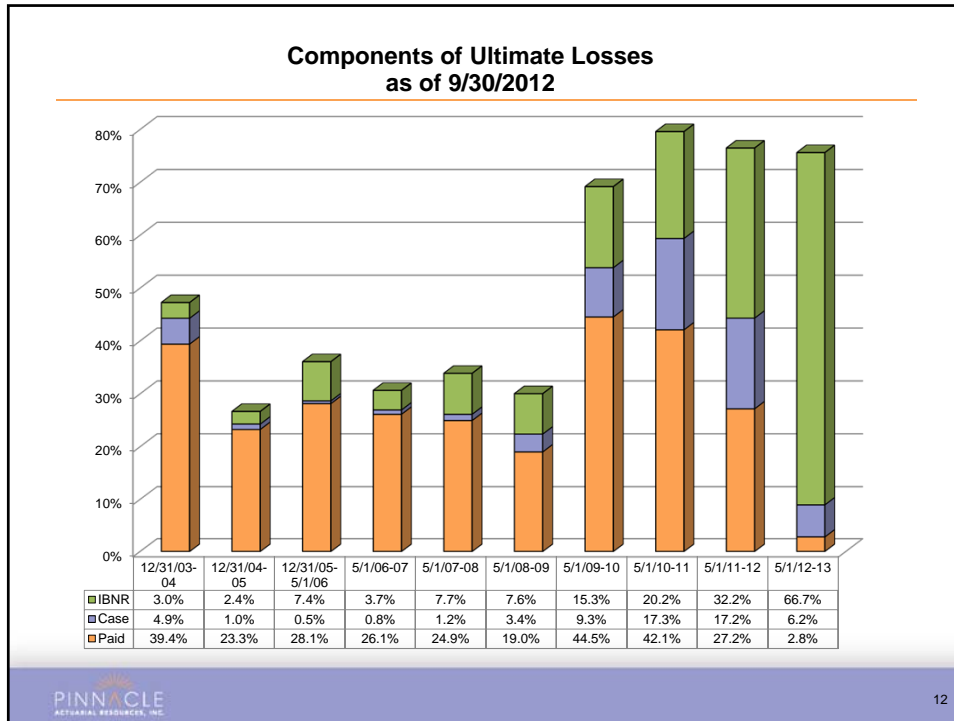
All Coverages Combined
Reported Incurred Losses at Retention (000s)

Policy Period	Evaluation Point - Measured in Months											Values at 7/31/2012	IBNR Emergence past YE
	12	24	36	48	60	72	84	96	108	120	132		
9/00-12/01	584	1,186	1,371	1,103	1,349	1,366	1,454	1,418	1,418	1,418	1,417	1,417	(0)
12/01-2/03	854	1,412	1,588	1,589	1,526	1,689	1,740	1,775	1,742	1,742		1,742	0
2/03-2/04	951	1,607	1,712	1,516	1,537	1,464	1,467	1,482	1,507			1,507	0
2/04-2/05	508	1,162	1,415	1,295	1,264	1,267	1,267	1,300				1,300	0
2/05-2/06	766	1,070	1,376	1,614	1,684	1,716	1,744					1,767	13
2/06-2/07	611	1,005	1,434	2,226	2,231	2,255						2,272	17
2/07-2/08	1,393	2,339	2,833	2,787	2,806							2,804	(2)
2/08-2/09	599	901	1,062	1,036								1,017	(19)
2/09-2/10	596	871	1,234									1,188	(45)
2/10-2/11	682	1,237										1,374	137
2/11-2/12	1,098											1,083	(16)

Policy Period	Report-to-Report Development Factors											
	12	24	36	48	60	72	84	96	108	120	132	Ultimate
9/00-12/01	2.0315	1.1567	0.8043	1.2234	1.0125	1.0642	0.9754	1.0002	1.0000	0.9990	1.0000	
12/01-2/03	1.6537	1.1243	1.0005	0.9606	1.1068	1.0304	1.0201	0.9810	1.0000			
2/03-2/04	1.6892	1.0654	0.8855	1.0138	0.9523	1.0025	1.0097	1.0171				
2/04-2/05	2.2883	1.2172	0.9155	0.9760	1.0026	1.0000	1.0259					
2/05-2/06	1.3978	1.2852	1.1734	1.0437	1.0190	1.0164						
2/06-2/07	1.6434	1.4273	1.5523	1.0023	1.0107							
2/07-2/08	1.6789	1.2113	0.9839	1.0066								
2/08-2/09	1.5043	1.1786	0.9757									
2/09-2/10	1.4611	1.4164										
2/10-2/11	1.8145											
Averages	1.7163	1.2314	1.0364	1.0323	1.0173	1.0227	1.0078	0.9994	1.0000	0.9990	1.0000	

IBNR Emergence for 05/06 Policy Period

IBNR Realized in 12 months past end of policy period	304	=	1,070	-	765
Add'l IBNR realized in 12 months ending 1/31/2008	305	=	1,375	-	1,070
Add'l IBNR realized in 12 months ending 1/31/2009	238	=	1,614	-	1,375
Add'l IBNR realized in 12 months ending 1/31/2010	71	=	1,684	-	1,614
Add'l IBNR realized in 12 months ending 1/31/2011	32	=	1,716	-	1,684
Add'l IBNR realized in 12 months ending 1/31/2012	28	=	1,744	-	1,716
Add'l IBNR realized in 6 months ending 7/31/2012	13	=	1,757	-	1,744
IBNR Emergence since end of 05/06 policy period	992	=	1,757	-	765



BOD Members with high level of knowledge

- Communication is still a big challenge for actuaries
- Regulators expect us to discuss fundamental concepts of:
 - Principles of Reserving Process (Point Estimate v Range)
 - Uncertainty
 - Historical Reserving Accuracy – both at company and industry
 - Trends and Risks at Company / Peer Companies / Industry
 - Risk factors affecting reserves
 - How does management consider actuary's estimates?
 - How were operational changes considered?
 - Key statistics and benchmarks (i.e., diagnostic tests)
 - Changes since prior evaluation
 - Material changes in methods/assumptions

Principles of Reserving

- Who is Responsible?
 - An individual of Management
 - Reserve Committee
 - Appointed Actuary
- Is there a different approach at YE as compared with during the year?
- What are significant judgments / assumptions that are used in the process?
- How is objectivity achieved? What internal controls are in place to assure

Consideration of Actuarial Estimates

- How does management's Best Estimate differ from that of Appointed Actuary?
- More conservative or less?
- Changes since prior year-end
- Did management consider factors and/or circumstances (i.e., operational changes) that the Appointed Actuary did not?
 - Contingencies
 - ECO's
 - Class action potential

Key Statistics and Benchmarks

- Booked v actuarial estimates by LOB, component (loss, DCC, A&O, Salv/Subro recoverable) and accident year/policy period
- Back-end Diagnostics
 - Frequency
 - Severity
 - Ave. Case reserve per Open Claim
 - Ratios of Paid to Reported Claim Counts
- Changes since Prior Evaluation

Variability in Loss Reserve Estimates

- Changes to historical loss development patterns
- Changes in claim frequency / severity
- Changes in mix of claims (liability v property, medical v indemnity)
- Changes in retained limits or underlying deductibles
- Macroeconomic changes
- Statutory/regulatory changes (e.g., CA WC, FL sinkhole)

- Range of Reasonable Estimates v Point Estimate

Reserve Ranges

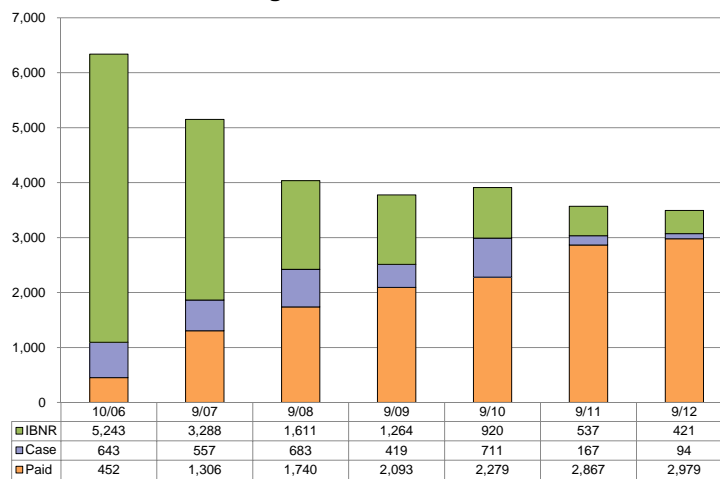
- Width of Range (% +/- from midpoint)
- Change in width from last year
- Where is booked amount relative to range and how has that changed?
- How was range developed?
- Is overall range the sum of lows/highs by LOB? Or is correlation considered?

Historical Accuracy of Actuarial Estimates

- In retrospect, have actuarial estimates been too high or too low?
- Why?
- Report Card

Historical Accuracy of Actuarial Estimates

06/07 Policy Period
Changes in Ultimate Losses



Relationship between Actuary and Company

New Regulatory requirement in 2012:

- CASTF guidance recommends a description of the actuary's role in advising BOD and/or management regarding the carried reserves (who, how, when,...) description of relationship
- Must identify how and when Appointed Actuary presents analysis to the Board.
- If appropriate, also how and when presented to management responsible for determining carried reserves.

What Questions Should You Ask?

(after "Could you please say that in plain English?")

- 1) What data did you rely on? Do you have concerns about the reliability of this data?
- 2) Did you incorporate any information external to our organization?
- 3) What are the 3 most important assumptions in your analysis?
- 4) How do your conclusions differ from that of management?

Questions to Ask (cont.)

- 5) Do your conclusions reflect undue pessimism or optimism?
- 6) What has been the historical accuracy of your prior conclusions?
- 7) Where are our current booked amounts relative to your actuarial range?
- 8) Does your range reflect all possible outcomes or is it a reasonable range of most likely outcomes?

Questions to Ask (cont.)

- 9) Has due diligence been performed to identify the effect, if any, of changes in internal company operations (retentions, TPA, underwriting, etc.)?
- 10) If such changes exist, what adjustments have been made to reflect these changes?
- 11) How do your results compare with last year?
- 12) What has changed since last year (blocks of business / data / methods / assumptions)

Questions to Ask

- 13) How do our results compare with our competitors / peers / industrywide averages?
- 14) Have you had difficulties dealing with the auditors? If so, how were problems resolved?
- 15) What materiality thresholds have been used in your analysis?
- 16) What are the key risk factors contributing to the uncertainty in our current (and future) financial condition?

Question #9 - Operational Change – new TPA in 2001

Average Reserve per Open Claim

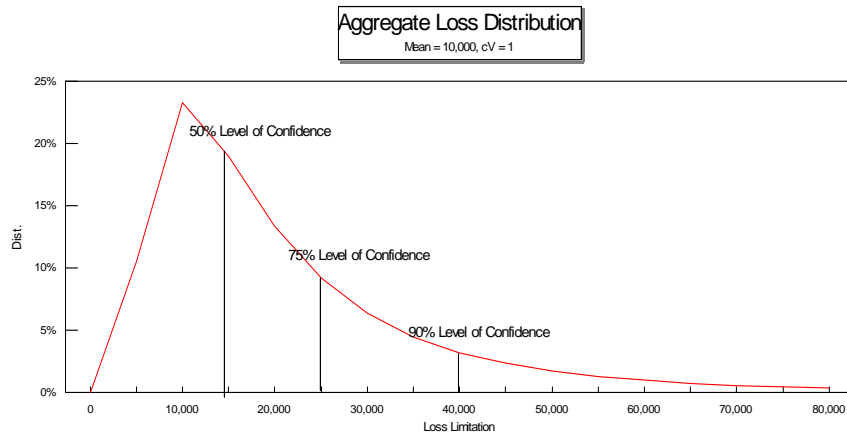
Policy Period	Evaluation Point - Measured in Months					
	12	24	36	48	60	72
1/96-1/97	5,254	13,613	20,054	10,227	9,820	12,252
1/97-1/98	4,195	15,298	22,953	25,085	26,738	23,572
1/98-1/99	4,891	16,444	14,697	16,094	14,204	27,880
1/99-1/00	4,713	18,953	39,179	48,331	100,661	48,631
1/00-1/01	6,885	21,372	21,266	24,351	28,991	28,589
1/01-1/02	5,003	11,864	21,712	48,237	66,071	83,406
1/02-1/03	4,700	10,859	17,880	19,967	24,617	
1/03-1/04	4,890	12,661	20,141	19,194		
1/04-1/05	5,451	16,275	19,592			
1/05-1/06	7,820	20,531				
1/06-1/07	8,491					

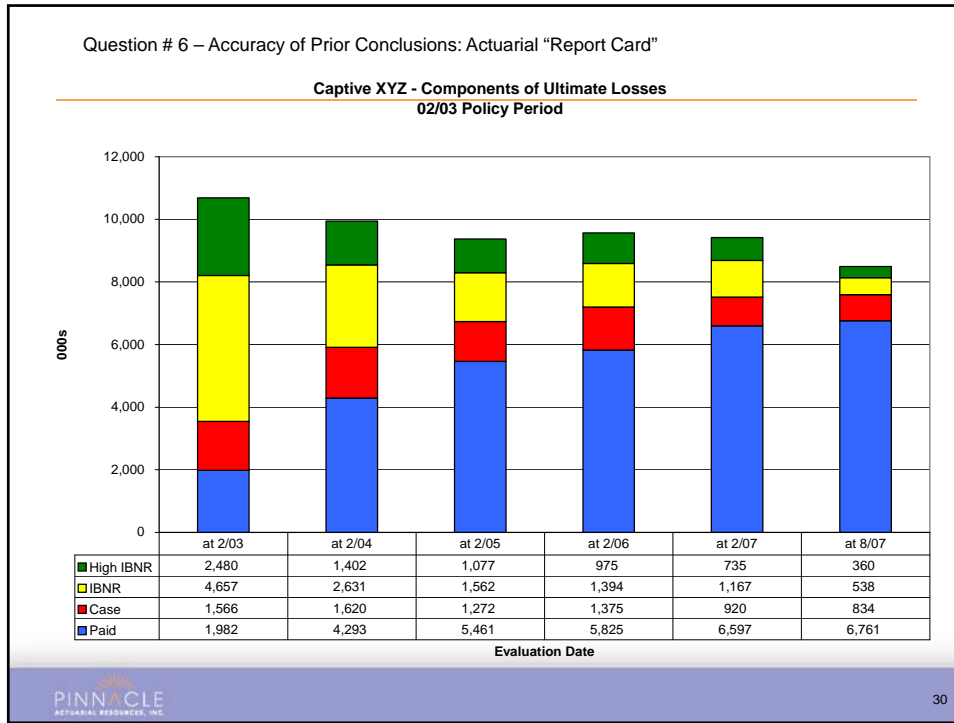
Question #4 and #7 – Comparison to Mgmt. Held Reserves

Summary of Loss and Loss Adjustment Expense Reserve Adequacy as of 12/31/06

Line of Coverage (1)	Case (2)	Loss + DCC		A&O Reserves		Total Loss+LAE Reserves		
		IBNR		Low (5)	High (6)	Low (7)	High (8)	
		Low (3)	High (4)					
Indicated	PPAL	\$27,091,026	\$1,880,916	\$8,158,745	\$2,801,811	\$3,467,316	\$31,773,754	\$38,717,088
	APD	800,135	905,004	1,089,348	135,577	162,353	1,840,716	2,051,836
	Total	27,891,161	2,785,920	9,248,093	2,937,389	3,629,670	33,614,470	40,768,924
Held	PPAL	27,091,026	9,230,835	9,230,835	3,003,938	3,003,938	39,325,799	39,325,799
	APD	800,135	348,001	348,001	103,445	103,445	1,251,581	1,251,581
	Total	27,891,161	9,578,836	9,578,836	3,107,382	3,107,382	40,577,380	40,577,380
Difference	PPAL	0	7,349,919	1,072,090	202,127	(463,379)	7,552,045	608,711
	APD	0	(557,003)	(741,347)	(32,133)	(58,909)	(589,136)	(800,256)
	Total	0	6,792,916	330,743	169,994	(522,287)	6,962,910	(191,544)

Question # 8 – What does range represent?





Question #11 – Changes since last year

Changes since Prior Evaluation

Policy Period	Change since prior year-end evaluation					
	Premium	Selected Ultimate Losses		Rptd. Inc. Losses	Implied Loss Ratio	
		Low	High		Low	High
(2)	(3)	(4a)	(4b)	(5)	(6a)	(6b)
1/98-1/99	0	(75,000)	(89,000)	(9,255)	-0.8%	-0.9%
1/99-1/00	0	(120,000)	(183,000)	(64,690)	-1.1%	-1.7%
1/00-1/01	0	(275,000)	(491,000)	(159,153)	-2.0%	-3.7%
1/01-1/02	0	50,000	250,000	204,975	0.3%	1.5%
1/02-1/03	0	(75,000)	(200,000)	182,066	-0.3%	-0.7%
1/03-1/04	(37,854)	(255,000)	(878,000)	748,361	-0.5%	-2.0%
1/04-1/05	269,884	(65,000)	(1,236,000)	3,436,960	-0.4%	-2.3%
1/05-1/06	6,361,864	750,000	7,054,000	12,200,782	-6.8%	1.8%
Total	6,593,894	(65,000)	4,227,000	16,540,045		

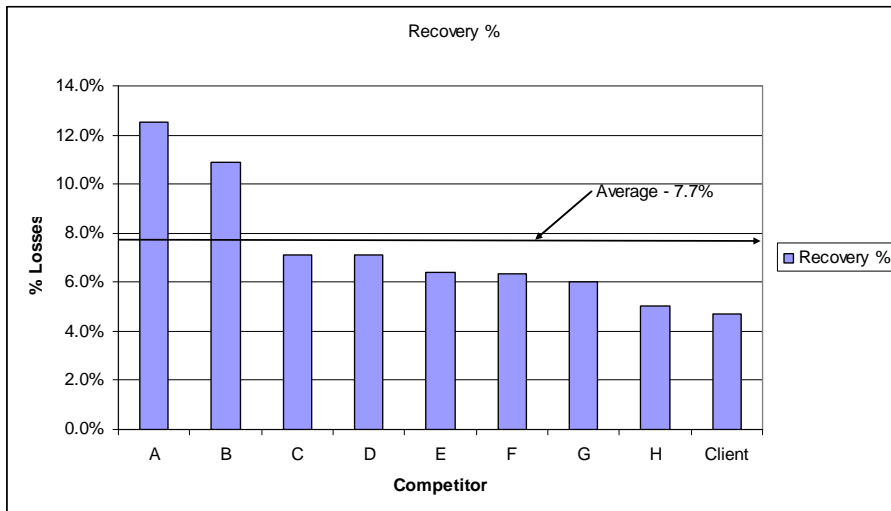
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Question 13 – Comparison to Peers

	Indicated % Risk Margin at Desired Level of Confidence						
	70%	75%	80%	85%	90%	95%	99%
XYZ	13.0%	16.7%	20.9%	25.8%	32.1%	41.5%	59.9%
A	7.2%	9.3%	11.6%	14.4%	17.8%	23.1%	33.4%
B	11.0%	14.2%	17.8%	22.0%	27.3%	35.4%	51.2%
C	8.7%	11.2%	14.0%	17.4%	21.6%	27.9%	40.4%
D	6.4%	8.2%	10.3%	12.7%	15.8%	20.5%	29.6%
E	14.6%	18.8%	23.6%	29.1%	36.2%	46.9%	67.8%
F	22.0%	28.4%	35.5%	43.8%	54.4%	70.3%	101.5%
G	10.3%	13.3%	16.6%	20.5%	25.5%	33.0%	47.8%
G	23.3%	30.0%	37.5%	46.4%	57.6%	74.6%	108.0%
I	14.9%	19.2%	24.1%	29.7%	36.9%	47.8%	69.2%
J	13.1%	16.8%	21.1%	26.1%	32.5%	42.4%	62.4%
Average	12.8%	16.5%	20.6%	25.5%	31.7%	41.1%	59.8%
Ave x Hi/Low	12.6%	16.2%	20.3%	25.1%	31.2%	40.4%	58.7%

Question #13 – Comparison to Competitors



Thank You for Your Attention

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