DECEPTION & TRUTH ANALYSIS FOR INVESTORS... THERE IS 86.5% OF ALPHA BEGGING TO BE MINED, RIGHT THERE IN THOSE REPORTS, BRIEFINGS & TRANSCRIPTS ON YOUR DESK!
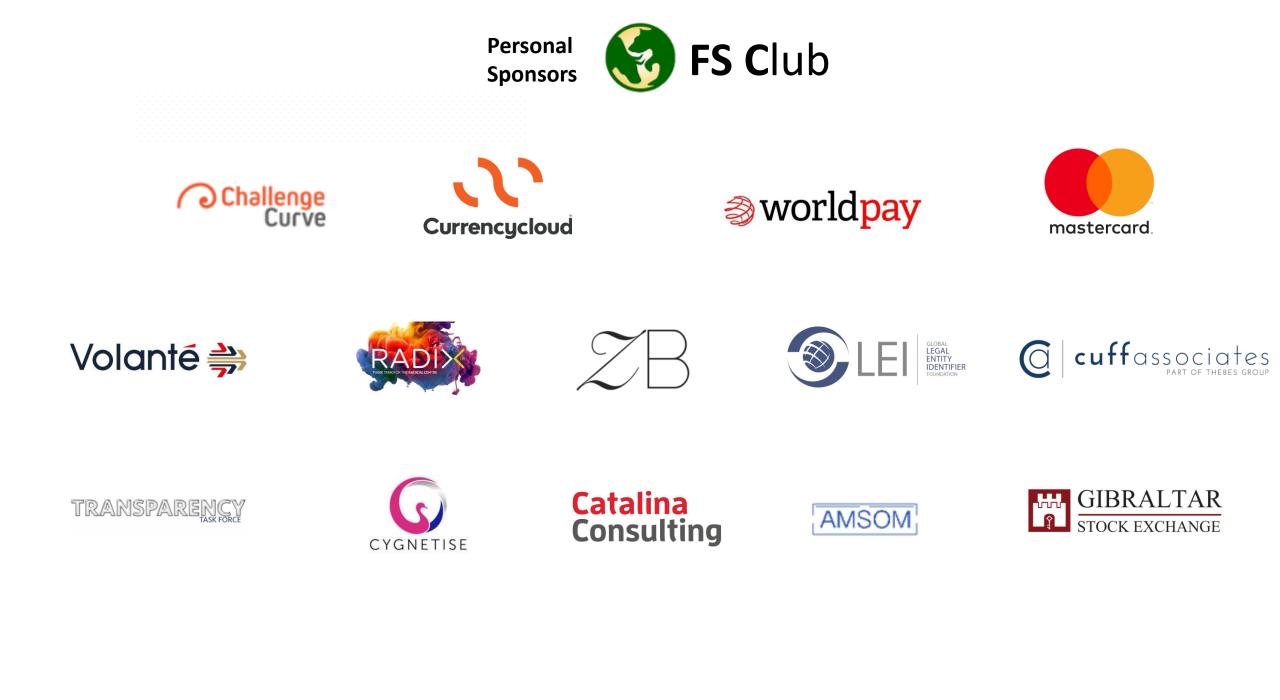
Jason Voss, Chief Executive Officer, Active Investment Management (AIM) Consulting

Webinar

Monday, 20 September, 16:00 BST

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A Word From Today's Chairman

Professor Michael Mainelli

Executive Chairman

Z/Yen Group

Today's Agenda

- 16:00 – 16:00   Chairman's Introduction

- 16:05 – 16:25   Keynote Presentation – Jason Voss

- 16:25 – 16:45   Question & Answer

Jason Voss

Chief Executive Officer

Active Investment Management (AIM) Consulting

Deception and Truth Analysis for Investors

Z/Yen – Financial Services Club

20 SEPTEMBER 2021

JASON APOLLO VOSS, CFA, CEO

Deception And Truth Analysis, Inc.

DECEPTION DETECTION
LIVE SCORING YOUR DOCUMENTS

- Caveat: Only submit document where you want the entirety evaluated for its level of deception

- Please send your document to, jvoss@deceptionandtruthanalysis.com

- We will score during Q+A

DECEPTION DETECTION
WHY IMPORTANT

- Our decisions are driven by information
- We must trust the information is accurate
- Most of us have no formal training in how to uncover deception

DECEPTION DETECTION
OVERVIEW

- It is not what you think
- S.U.E.
- D.A.T.A.
- Q+A

THE TRUTH ABOUT LIE DETECTION
IT IS NOT WHAT YOU THINK

- It is not about body language
- Largest ever meta-analysis of lie detection? 54% accuracy
- Financial pros? 49.4% accuracy
- Financial pros, in domain? 51.8% accuracy
- But, it is even worse than that, because truth bias = 60.6%

S.U.E.
Strategic Use of Evidence

STRATEGIC USE of EVIDENCE
S.U.E.

- Based on the pioneering work of Dr. Maria Hartwig & others

STRATEGIC USE OF EVIDENCE (S.U.E.)
TRADITIONAL INTERROGATION TECHNIQUE

- Assumption 1: Direct questions → anxiety/leakage
- Assumption 2: Liars feel guilty and anxious
- Assumption 3: Some body language is indicative of anxiety
- Assumption 4: Body language cues are more obvious if the subject is anxious/stressed
- Step 1: Ask direct questions about the evidence you have to make them nervous
- Step 2: Watch for their body language

STRATEGIC USE OF EVIDENCE (S.U.E.)
ASSUMPTIONS

- Accuracy: up to 88%
- Assumption 1: Both truth-tellers and liars want you to believe them
- Assumption 2: The strategies for accomplishing this are radically different
- Step 1: Ask broad context questions
- Step 2: Use the funnel technique to narrow down the context
- Step 3: Watch what happens to the interviewee as you narrow the context

STRATEGIC USE OF EVIDENCE (S.U.E.)
FUNNEL APPROACH TO QUESTIONING

Elicit free narrative

Gradually narrow focus of narrative

Specific Questions

D.A.T.A.
Deception And Truth Analysis

Deception And Truth Analysis
D.A.T.A.

- Based on the pioneering work of Dr. James Pennebaker & many others, including •D•A•T•A• Inc.

- The fingerprints of language – how language is used, not what language is used – allow for insights into a person's behavior

Deception And Truth Analysis
D.A.T.A.

- 86.5% of financial data is contained in text, not numbers
- Texts are indicative of underlying behaviors
- For example…
  - Leaders use more third-person pronouns vs. first-person pronouns
  - Men use more words per sentence and nouns than women, women more adjectives
  - Truth-tellers and deceivers use language differently, too

Deception And Truth Analysis (D.A.T.A.)
Scandal Company Tests

Ticker	Company	Size ($millions)	Known Start of Fraud	Year of Scandal	Alert Score Year Before Scandal	of Years of Warning
ACC	Adelphia	$ 2,300		2002	-44.8%	2
AIG	AIG	$ 3,900	2000	2005	-52.4%	12
CUC	Cendant	$ 640	1994	1998	-48.8%	3
ENRN	Enron	$ 74,000		2001	-76.3%	8
HLS	Healthsouth	$ 1,400	1996	2003	-27.1%	9
LEH	Lehman Brothers	$ 50,000		2008	-3.8%	13
SAY	Satyam	$ 1,400		2009	-38.4%	6
TYC	Tyco International	$ 600		2002	-81.7%	7
WCOM	Worldcom	$ 3,800	2000	2001	-47.9%	4
WM	Waste Management	$ 6,000		1997	-41.1%	2
		$ 144,290				6.6

Deception And Truth Analysis (D.A.T.A.)
Scandal Company Tests (Slight Return)

Ticker	Alert Score 1993	Alert Score 1994	Alert Score 1995	Alert Score 1996	Alert Score 1997	Alert Score 1998	Alert Score 1999	Alert Score 2000	Alert Score 2001	Alert Score 2002	Alert Score 2003	Alert Score 2004	Alert Score 2005	Alert Score 2006	Alert Score 2007	Alert Score 2008
ACC	-1.0%	-32.1%	-16.2%	-16.1%	23.5%	-5.4%	-47.2%	-44.8%			4.6%					
AIG	-42.0%	-31.5%	-34.5%	-34.5%	-21.8%	-15.8%	-23.2%	-33.6%	-23.7%	-18.7%	-35.9%	-52.4%	-37.6%	-42.6%		
CUC			-35.5%	-29.3%	-48.8%	-25.7%	-38.2%	0.0%								
ENRN	-123.1%	-115.6%	-96.6%	-101.3%	-75.9%	-38.3%	-72.6%	-76.3%								
HLS	0.0%	-66.6%	-50.3%	-63.5%	-49.4%	-9.4%	-36.6%	-38.6%	-38.3%	-27.1%						
LEH	-29.5%	0.0%	-42.3%	-41.5%	-30.6%	-24.4%	-34.8%	-54.4%	-30.3%	-34.9%	-33.0%	-55.4%	-51.6%	-46.7%	-3.8%	
SAY									-16.5%	1.9%	-44.1%	-35.9%	-1.2%	-23.6%	-30.5%	-38.4%
TYC			-118.6%	-119.6%	-115.1%	-67.0%	-2.7%	-34.7%	-81.7%	-20.3%	-9.5%					
WCOM			-29.4%	4.6%	-32.6%	-19.7%	-35.3%	-47.9%	-36.4%	-2.8%	-31.7%	-60.0%				
WM			-37.6%	-41.1%	-33.9%	-17.3%										

Note 1: Some of the businesses did not file electronic annual reports on EDGAR until the mid-1990s.

Note 2: The analysis is extended 1-yr past the date of public scandal if the firm survived & issued annual reports.

Note 3: D.A.T.A. fraud algorithms are designed to be more sensitive to scandal being indicated, than not.

Deception And Truth Analysis (D.A.T.A.)
Fraudulent Companies

- Have unique language fingerprints
- For example:
  - Use swear words 277.7% more frequently than normal
  - Use words that reference the body 56.2% less than normal
  - Reference risk-type words 55.9% more than normal
  - Use first person pronouns 54.1% more than normal

Deception And Truth Analysis (D.A.T.A.)
VS. DJIA

- Each year score each of the 30 components' deception scores

- Next year, do not buy the 5 companies with the highest deception scores

- Repeat the analysis

Deception And Truth Analysis (D.A.T.A.)
VS. DJIA

	1-YEAR
AVG. ANNUAL RETURN	1.04%
TOTAL RETURN	11.85%
STANDARD DEVIATION	1.62%
SHARPE RATIO	5.85
OUTPERFORM YEARS	9 of 11

DECEPTION DETECTION
KEY TAKEAWAYS

1. Body language does not work for detecting deception
2. Liars and truth tellers respond to questioning very differently
3. Computer-driven text-based deception detection is a huge time saver, money saver and is more accurate

Q+A

Jason Apollo Voss, CFA
jvoss@deceptionandtruthanalysis.com

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Thank You For Listening

FS Club

Forthcoming Events

- Thu, 23 Sep (16:00-16:45)   This Is How They Tell Me The World Ends: The Cyberweapons Arms Race

- Fri, 24 Sep (09:00-10:00)   Launch Of Global Financial Centres Index 30

- Mon, 27 Sep (15:00-15:45)   Modern Monetary Theory: Something Old, Something New, Something Borrowed, Something True

- Mon, 04 Oct (16:00 -16:45)   Halophytes: How To Solve The Land, Water, Food, Energy & Climate Emergency While Generating Wealth

Visit https://fsclub.zyen.com/events/forthcoming-events/

APPENDIX

DECEPTION DETECTION
JASON A. VOSS, CFA BIO

- Retired portfolio manger of Davis Appreciation & Income Fund
- Bested S&P 500 by 49.1%, Lipper #1 in US
- One of first ten funds awarded Stewardship Grade "A"
- First published researcher of deception in finance:
  - "Detecting Lies in the Financial Industry: A Survey of Investment Professionals' Beliefs" (2015)
  - "Investment Professionals' Ability to Detect Deception: Accuracy, Bias and Metacognitive Realism" (2017)
  - *Lie Detection Guide: Theory & Practice for Investment Professionals*
- CEO of Deception And Truth Analysis (D.A.T.A.), Inc.

DECEPTION DETECTION
Even experts fail using body language

1. Overall average for people is 54.22% (n = 11,647)

2. Police officers, detectives, judges, and psychologists: 55.51% (n = 2,685)

Group	Accuracy %
Psychologists	61.56%
Judges	59.01%
Police Officers	55.30%
Detectives	50.80%
Teachers	70.00%

DECEPTION DETECTION
CUES TO DECEPTION > CHANCE

Cue to Deception	Actual Correlation to Lying
Uncooperative	0.66
Pitch (when motivated)	0.59
Verbal & vocal delays	0.55
Nervous, tense	0.51

Behavioral cues to deception with 95% significance, from DePaulo, Bella. *The Hows and Whys of Lies.* Amazon Digital Services LLC. 20 October 2010

Deception And Truth Analysis (D.A.T.A.)
Scandal Company Tests, a more recent example

	Q1 '19	Q2 '19	Q3 '19
Wirecard	-26.3%	-17.4%	-58.0%

Deception And Truth Analysis (D.A.T.A.)
PERFORMANCE

Fact	Description
125	words comprehended per minute by a person
237,894	JP Morgan's 2012 10(k) total words
1903.152	number of minutes to read JPM's 2012 10(k)
31	hours
43	minutes
9	seconds
$ 70,000	median pay of a mutual fund research analyst
$ 35	median pay per hour of a mutual fund research analyst
$ 1,110.17	cost of having human analyst assess JP Morgan's 2012 10(k)
1,101,410	total words in 5 documents analyzed by D.A.T.A. in experiment
15.63	average number of seconds it took to analyze those words in 5 trials
70,467.69	words analyzed by D.A.T.A. per second
3.38	estimated time for D.A.T.A. to analyze JP Morgan's 2012 10(k)
99.997%	**time savings in using D.A.T.A. and not a person**
$ 75.00	price to use D.A.T.A. to analyze one report
93.24%	**cost savings of using D.A.T.A.**
50.0%	**accuracy of a human detecting deception by reading a text and rendering an assessment**
152.8%	truth bias of financial professionals
>72.7%	**accuracy of a single deception algorithm (note: D.A.T.A. uses five) as demonstrated scientifically**