

■ Signals, Sprignals and Noise: Deception Analysis in Financial Events

INTRODUCTION

Deception Analysis ■ ■ ■

Modern deception analysis dates from 1962 with Roberta Wohlstetter's Pearl Harbor: *Warning and Decision*, which drew on the concept of "signals" and "noise" put forth by Claude Shannon, information theorist and telecommunications pioneer. Wohlstetter was the first to frame the job of intelligence analysts as one of identifying "signals" amidst background "noise." Her work became the basis for the design of warning intelligence systems.

Barton Whaley used the Wohlstetter paradigm in his study of strategic surprise. He reviewed the events and information available prior to the 1941 German attack on the Soviet Union, Operation BARBAROSSA and published his results in *Codeword BARBAROSSA*. William R. Harris noted that three-quarters of Whaley's cases of strategic surprise involved deliberate "signals" designed to lull or defeat warning systems. Harris maintained that the challenge of the Russian warning intelligence community was to differentiate genuine "signals" of impending invasion from "spurious signals" created by deception planners, e.g., defensive military preparations and deployments, non-hostile intent, etc. within the context of other information "noise."

Harris urged Whaley to utilize a tripartite model of signals, spurious signals (coining the term "sprignals" in the process) and noise noting that a careful analysis of patterns within sprignals had the potential to accelerate timely warning of surprise attack. In *Stratagem: Deception*

and Surprise in War, 1969, Whaley extended his analysis to 68 cases of surprise attack in 20th Century warfare, finding a high positive correlation between the intensity of deception and the likelihood of surprise attack and a positive correlation between the intensity of deception and the intensity of surprise.

The analyst's task is greatly complicated in a signal, sprignal and noise model as he must go beyond distinguishing between what is signal and noise to the authentication of both, recognizing that the perpetrator may deliberately inject both noise and sprignals. Authentication validates signals, ensuring that those acted upon are genuine, as it deciphers the intent and method of deception so that warning systems can be tuned to recognize further deception.

Deception, be it military, diplomatic, financial or political has four components:

- Security
- Plausibility
- Adaptability (however elaborate, deception must adapt to the changing situation)
- Integration (deception effort integrated at all levels and with all means)

Denial and deception (D&D) seeks to:

- Disrupt the analyst's decision cycle (what the military calls Boyd's OODA Loop) to "observe, orient, decide and act"

- Induce inaccurate impressions about capabilities or intentions, causing the target to apply intelligence assets inappropriately, and fail to employ all assets to best advantage

Countering deception is difficult. Frank Stech, MITRE's head of counter-deception research, observes that those being deceived "do not systematically consider alternative explanations for the evidence they observe and incorrectly weigh the evidence they do have." As a result, "people often dismiss important evidence, prematurely prune alternative hypotheses, and jump to conclusions." This makes "people and organizations easy to deceive."

Since deception is relatively rare, it is not surprising that people are poor at countering deception:

- Poor anomaly detection (missing contextual cues, or prematurely dismissing as irrelevant or inconsistent with other intelligence)
- Misattribution (attributing a deception event to collection gaps or processing errors)
- Failure to link deception tactics to deception hypotheses (noticing anomalies but failing to recognize them as indicators of deception)
- Inadequate support for deception hypotheses (failing to link an assessment of an adversary's deception tactics and goals to the adversary's strategic goals; i.e., failing to test denial or deception course of actions against the available evidence)

Deception planning and deception countermeasures commonly applied to military and diplomatic spheres are conspicuously absent in analyzing commercial business endeavours. These tools can provide advance notice saving investors money that would otherwise fall prey to spoofing and disinformation.

Designed to "make the enemy quite certain, very decisive, and wrong," the current deception paradigm of strategic surprise (see introduction) contains these elements:

- Signals: legitimate information from or about the adversary
- "Sprignals" or spurious signals: Information intentionally designed to deceive
- Noise: Background and environmental information that may be legitimate or from various sources but is ultimately irrelevant and interferes with detection of signals and sprignals

Every deception effort involves a series of sprignals and signals that "hide the real while revealing the false":

- Dissimulation: The covert element that conceals truth from the enemy
- Simulation: The overt element that reveals falsities presented to the enemy as truth

Enron Corp. mimicked this model of deception and strategic surprise using deliberate "sprignals" designed to lull or defeat warning systems that were issued in ever increasing volume. These sprignals took a variety of forms such as "designer investment" vehicles, obscured financials and corporate pronouncements. Enron's auditor, Arthur Andersen, alternatively abetted the creation of these sprignals and, ultimately, validated them as genuine.

The Enron scandal was essentially a story of executives and auditors deceiving investors about the true state of its business. The complexity of Enron's business – becoming less an energy trader, more of a publicly-traded hedge fund, and, even,

an Internet bandwidth provider – created extraordinary opportunity to obfuscate and conceal. The Chewco Investments off-balance-sheet partnership and the four special purpose entities known as the Raptor vehicles were sheer marvels of sprignal generation in that they shielded Enron's vulnerability to all but the very few. The energy-trading giant of its day used a web of hundreds of complex partnerships to shield more than \$1 billion in debt from investors and the Securities and Exchange Commission (SEC). The outcome was a substitution of fraud and self-dealing for legitimate growth.

It was startling that despite "professed independence and variations in technique," prominent sell-side analysts overwhelmingly reached the same, wrong, conclusions about Enron in 2001 up to the eve of its bankruptcy. The few skeptics were independent and boutique sell-side analysts, short-sellers and consumer/non-profit organizations intent on looking through Enron's seemingly many achievements for fundamental financial red flags.

Contributing Factors in background "Noise":

- "Go-go" bull market demands higher stock performance despite declining fundamentals
- CEO compensation disproportionately tied to share price
- "Celebrity class" of CEOs and stock analysts enjoy uncritical adulation
- Wall Street analysts' conflicts of interest
- New, increasingly opaque business models
- "Designer investment" vehicles created by external law firms and in-house counsel, often in cooperation with auditors
- Credulous acceptance of these models by analysts and investors
- Auditors' weakened oversight due to their own growth needs
- Congressional campaign contributions from accountancies and firms open to audit
- Congressional hobbling of public and private regulatory bodies

While the “noise” category also includes invalid assumptions and stereotypes, faulty appraisals and dissemination of information, this author is of the opinion that attributing all of these factors to “noise” is exceedingly charitable in that some of the actions of investment analysts and auditors were contributory sprignals in and of themselves.

Lessons in effective Counter-deception and Competitive Intelligence ■ ■ ■

Nearly every Wall Street sell-side analyst reached the same conclusions about Enron in 2001 up to the eve of its bankruptcy on December 2, 2001. As of October 18, all 15 analysts tracked by Thomson Financial/First Call rated Enron a “buy” with 12 of the 15 rating it a “strong buy.”

Who were the skeptics and why?

- Short-sellers seeking profit from a stock's decline
- Independent/Boutique/Sell-side analysts
- Consumer/Non-profit groups

Despite Enron's seeming achievements (consistently meeting earnings targets, outstanding profits growth for many quarters, avoidance of high valuations common to the tech sector, leadership in it's field and adoration from Wall Street) and the healthy climate of the energy sector (no recession), the skeptics looked at simple fundamentals.

Doubters saw numerous red flags, including:

- Low return on capital (despite impressive earnings-per-share growth)
- Declining margins on pretax operating earnings
- Increasing leverage
- The valuation placed on the firm's new broadband business

- Large sales of stock by senior executives
- Hard-to-follow related party transactions
- Abstruse disclosures that could not explain how Enron made strong profits even after talking to analysts who covered the firm
- Omissions in reporting, such as a gross margin number for its trading business [wholesale services] that accounted for 96% of revenue

This minority endured withering criticism, more from Wall Street analysts than from Enron itself, proclaiming that critics suffered “fundamental misunderstandings about the energy market and Enron's business model.”

In the future, improved reporting of significant corporate events or changes in operations, such as the kind of off-balance-sheet transactions that helped topple Enron; unexpected departures of top executives, senior managers or directors; defaults on company debt; and “lock-out” periods during which employees are barred from selling company stock from their retirement accounts should have promoted earlier discovery of deception events.

Competitive Intelligence practitioners must separate signal from sprignal and noise, fearlessly question assumptions, examine motives, run the data, look for discontinuities, and make continuous “sniff tests” as to the merits of the whole. Failure to do so will maroon the unwary with the sell-side analysts that had backed Enron with “unabashed enthusiasm” and were at a loss for an explanation when the stock began to collapse.

Gordon Housworth is Managing Partner at Intellectual Capital Group LLC, (ICG), which is a management consulting and technology services firm whose primary service areas are Intellectual Property Protection, Risk Analysis, Business Intelligence, and Supply Chain and Value Stream Analysis.

A deeper look... beyond the surface



RESTRUCTURING & PERFORMANCE IMPROVEMENT SERVICES

SRR's Due Diligence Services provide a thorough financial, operational and strategic assessment of an entity in a variety of situations. We have completed engagements on behalf of corporations, equity funds, banks and union groups. Our experienced professionals provide a full range of services throughout the entire transaction continuum.

- STRATEGIC PLANNING
- INTEGRATED FINANCIAL AND OPERATIONAL EXPERTISE
- FORECASTING / MODELING ANALYSES AND EXPERTISE
- INTEGRATION PLANNING / MANAGEMENT
- VALUE ENHANCEMENT

For more information, please contact:

Vincent P. Pavlak, CPA, CFE, CIRA at 248.432.1236 or vpavlak@srr.com
John Pencak, CPA, CIRA at 248.432.1256 or jpencak@srr.com

SRR
STOUT | RISIUS | ROSS

CHICAGO CLEVELAND
DETROIT WASHINGTON, DC
WWW.SRR.COM