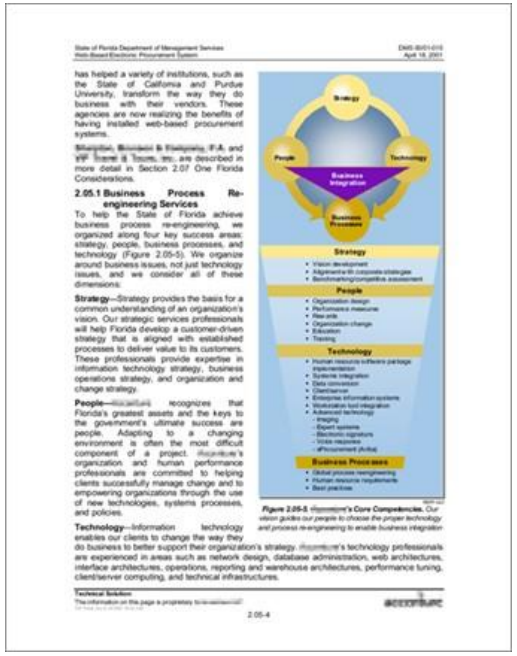
Are We Stuck in the Past? The Need for New Thinking

Ajay Patel, CF APMP
Chief Executive Officer, SMA, Inc.

Differing Levels of Maturity Across Bidders

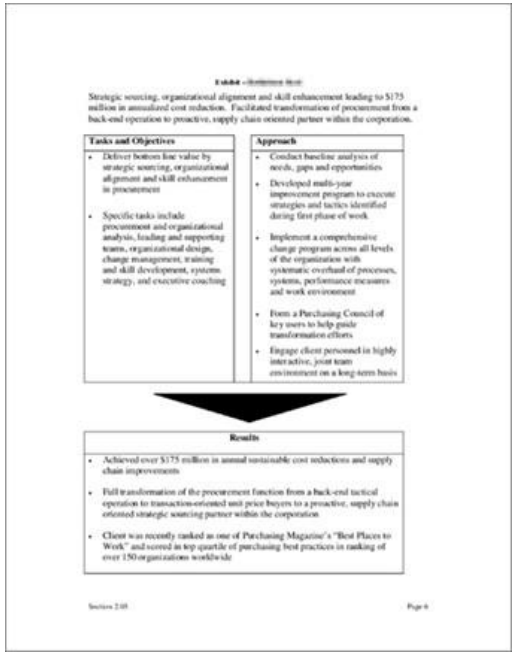
3 responses to the same requirements, Florida eProcurement, 2001…

Bidder A



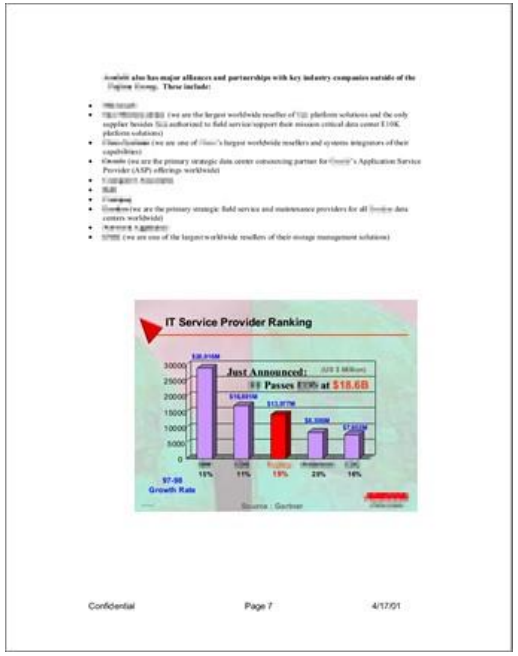
Rank **1/16** Score **94.80**

Bidder B



Rank **4/16** Score **78.60**

Bidder C



Rank **13/16** Score **49.25**

The 1970s

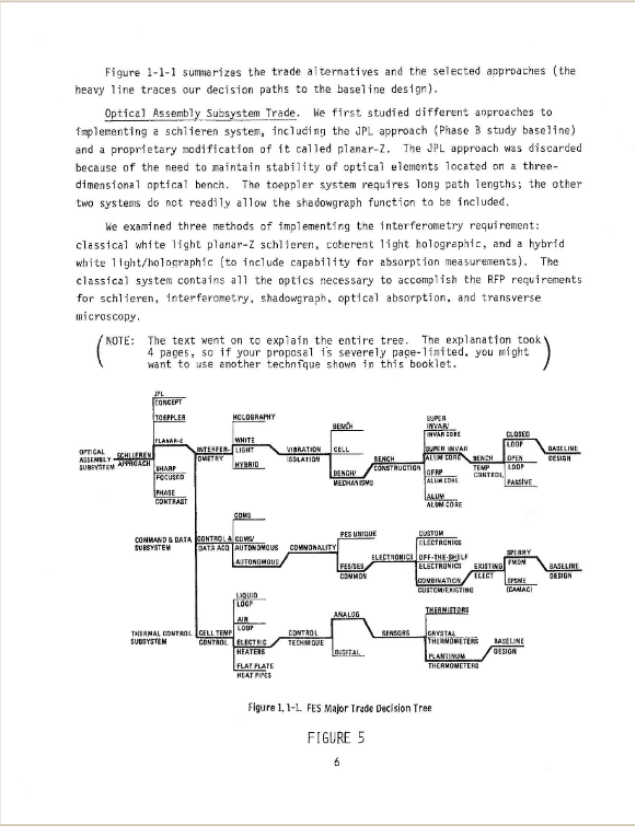


Figure 1-1-1 summarizes the trade alternatives and the selected approaches (the heavy line traces our decision paths to the baseline design).

Optical Assembly Subsystem Trade. We first studied different approaches to implementing a schlieren system, including the JPL approach (Phase B study baseline) and a proprietary modification of it called planar-Z. The JPL approach was discarded because of the need to maintain stability of optical elements located on a three-dimensional optical bench. The toeppler system requires long path lengths; the other two systems do not readily allow the shadowgraph function to be included.

We examined three methods of implementing the interferometry requirement: classical white light planar-Z schlieren, coherent light holographic, and a hybrid white light/holographic (to include capability for absorption measurements). The classical system contains all the optics necessary to accomplish the RFP requirements for schlieren, interferometry, shadowgraph, optical absorption, and transverse microscopy.

(NOTE: The text went on to explain the entire tree. The explanation took 4 pages, so if your proposal is severely page-limited, you might want to use another technique shown in this booklet.)

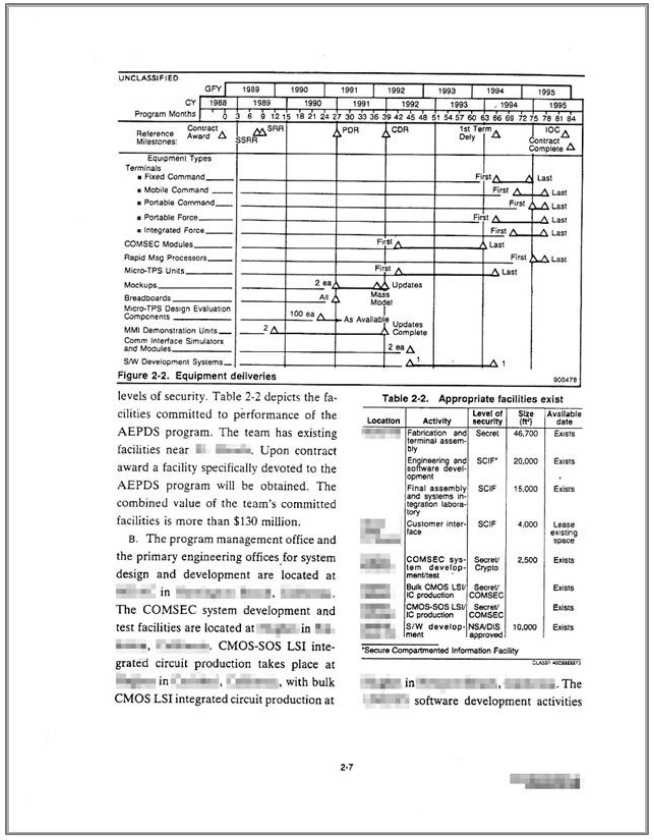
Figure 1.1-1. FES Major Trade Decision Tree

FIGURE 5

6

- Technical report format
- “River-raft” technique common: graphic rafts on a river of text
- No widespread use of thesis statements
- However, STOP in use at Hughes
- Single column
- Simple layout
- Not easy to revise
- Hand-drawn illustrations
- Simple covers
- Typewriters
- Carbon paper and mimeographs
- X-Acto knives and Magic Tape

The 1980s



UNCLASSIFIED

Figure 2-2. Equipment deliveries

levels of security. Table 2-2 depicts the facilities committed to performance of the AEPDS program. The team has existing facilities near [redacted]. Upon contract award a facility specifically devoted to the AEPDS program will be obtained. The combined value of the team's committed facilities is more than $130 million.

B. The program management office and the primary engineering offices for system design and development are located at [redacted] in [redacted]. The COMSEC system development and test facilities are located at [redacted] in [redacted], CMOS-SOS LSI integrated circuit production takes place at [redacted] in [redacted], with bulk CMOS LSI integrated circuit production at [redacted] in [redacted]. The [redacted] software development activities

Table 2-2. Appropriate facilities exist

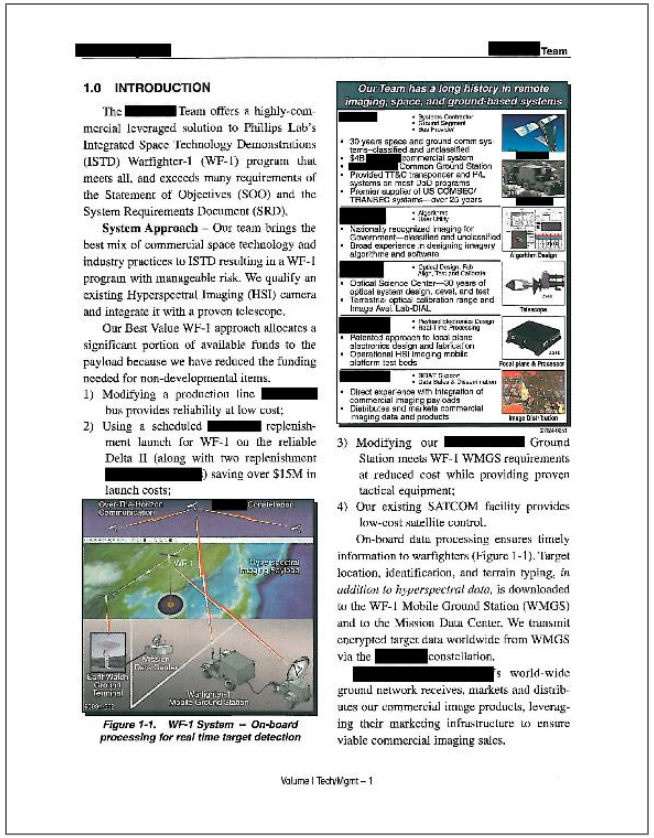
Location	Activity	Level of security	Size (ft²)	Available date
[redacted]	Fabrication and terminal assembly	Secret	46,700	Exists
	Engineering and software development	SCIF*	20,000	Exists
	Final assembly and systems integration laboratory	SCIF	15,000	Exists
[redacted]	Customer interface	SCIF	4,000	Lease existing space
[redacted]	COMSEC system development/test	Secret/ Crypto	2,500	Exists
[redacted]	Bulk CMOS LSI/ IC production	Secret/ COMSEC		Exists
[redacted]	CMOS-SOS LSI/ IC production	Secret/ COMSEC		Exists
[redacted]	S/W development	NSA/DIS approved	10,000	Exists

*Secure Compartmented Information Facility

2-7

- Some double column formats
- Foldouts
- Word processor-based revisions, e.g. WordStar, WordPerfect, Word
- Tables made with IBM character set special characters
- Laser printers with monospaced fonts
- Simple vector graphic programs, e.g. GEM Draw Plus
- Desktop publishing using mainframes and workstations, e.g. LaTeX, Interleaf
- Color covers using photographic montages

The 1990s



[redacted] Team

1.0 INTRODUCTION

The [redacted] Team offers a highly-commercial leveraged solution to Phillips Lab's Integrated Space Technology Demonstrations (ISTD) Warfighter-1 (WF-1) program that meets all, and exceeds many requirements of the Statement of Objectives (SOO) and the System Requirements Document (SRD).

System Approach – Our team brings the best mix of commercial space technology and industry practices to ISTD resulting in a WF-1 program with manageable risk. We qualify an existing Hyperspectral Imaging (HSI) camera and integrate it with a proven telescope.

Our Best Value WF-1 approach allocates a significant portion of available funds to the payload because we have reduced the funding needed for non-developmental items.

1) Modifying a production line [redacted] bus provides reliability at low cost;
2) Using a scheduled [redacted] replenishment launch for WF-1 on the reliable Delta II (along with two replenishment [redacted]) saving over $15M in launch costs;

Figure 1-1. WF-1 System – On-board processing for real time target detection

3) Modifying our [redacted] Ground Station meets WF-1 WMGS requirements at reduced cost while providing proven tactical equipment;
4) Our existing SATCOM facility provides low-cost satellite control.

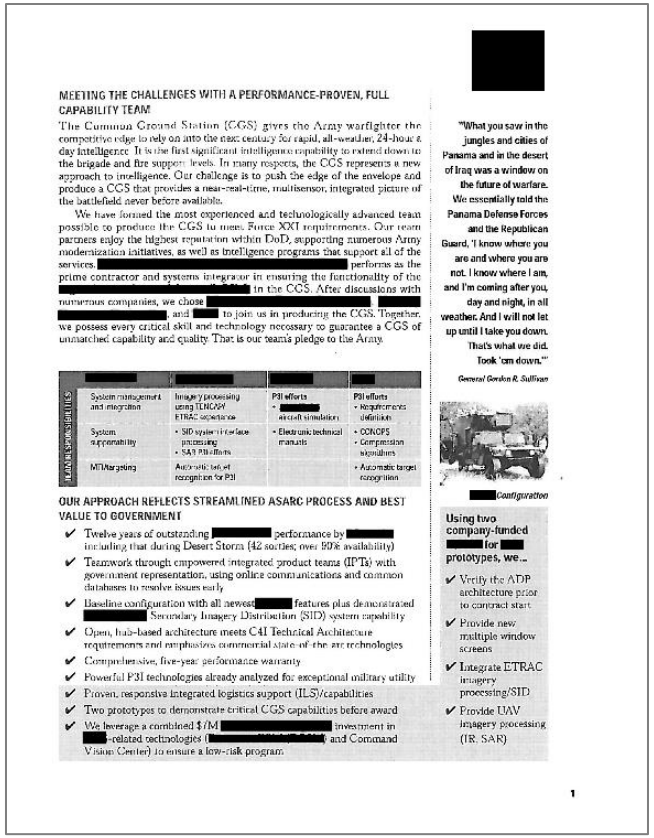
On-board data processing ensures timely information to warfighters (Figure 1-1). Target location, identification, and terrain typing, *in addition to hyperspectral data*, is downloaded to the WF-1 Mobile Ground Station (WMGS) and to the Mission Data Center. We transmit encrypted target data worldwide from WMGS via the [redacted] constellation.

[redacted]'s world-wide ground network receives, markets and distributes our commercial image products, leveraging their marketing infrastructure to ensure viable commercial imaging sales.

Volume I TechMgmt – 1

- Color!
- Cover tells the story
- Text "illustrates the graphics"
- Emphasis on graphical elements for ease of understanding
- Consistent use of themes
- Focus boxes for the hard sell
- Templates custom to the proposal
- Mandatory use of foldouts to tell the entire story
- Strategically-planned proposal widespread

The 1990s (with a bit of innovation)



MEETING THE CHALLENGES WITH A PERFORMANCE-PROVEN, FULL CAPABILITY TEAM

The Common Ground Station (CGS) gives the Army warfighter the competitive edge to rely on into the next century for rapid, all-weather, 24-hour a day intelligence. It is the first significant intelligence capability to extend down to the brigade and fire support levels. In many respects, the CGS represents a new approach to intelligence. Our challenge is to push the edge of the envelope and produce a CGS that provides a near-real-time, multisensor, integrated picture of the battlefield never before available.

We have formed the most experienced and technologically advanced team possible to produce the CGS to meet Force XXI requirements. Our team partners enjoy the highest reputation within DoD, supporting numerous Army modernization initiatives, as well as intelligence programs that support all of the services. [redacted] performs as the prime contractor and systems integrator in ensuring the functionality of the [redacted] in the CGS. After discussions with numerous companies, we chose [redacted] and [redacted] to join us in producing the CGS. Together, we possess every critical skill and technology necessary to guarantee a CGS of unmatched capability and quality. That is our team's pledge to the Army.

"What you saw in the jungles and cities of Panama and in the desert of Iraq was a window on the future of warfare. We essentially told the Panama Defense Forces and the Republican Guard, 'I know where you are and where you are not. I know where I am, and I'm coming after you, day and night, in all weather. And I will not let up until I take you down. That's what we did. Took 'em down.'"
General Gordon R. Sullivan

MAJOR RESPONSIBILITIES	[redacted]	[redacted]	[redacted]	[redacted]
	System management and integration	Imagery processing using TENCAP/ ETRAC experience	P3I efforts • [redacted] aircraft simulation	P3I efforts • Requirements definition
	System supportability	• SID system interface processing • SAR P3I efforts	• Electronic technical manuals	• CONOPS • Compression algorithms
	MTI/targeting	Automatic bit-of recognition for P3I		• Automatic target recognition

[redacted] Configuration

OUR APPROACH REFLECTS STREAMLINED ASARC PROCESS AND BEST VALUE TO GOVERNMENT

- ✔ Twelve years of outstanding [redacted] performance by [redacted] including that during Desert Storm (42 sorties; over 90% availability)
- ✔ Teamwork through empowered integrated product teams (IPTs) with government representation, using online communications and common databases to resolve issues early
- ✔ Baseline configuration with all newest [redacted] features plus demonstrated [redacted] Secondary Imagery Distribution (SID) system capability
- ✔ Open, hub-based architecture meets C4I Technical Architecture requirements and emphasizes commercial state-of-the-art technologies
- ✔ Comprehensive, five-year performance warranty
- ✔ Powerful P3I technologies already analyzed for exceptional military utility
- ✔ Proven, responsive integrated logistics support (ILS)/capabilities
- ✔ Two prototypes to demonstrate critical CGS capabilities before award
- ✔ We leverage a combined $/M [redacted] investment in [redacted]-related technologies ([redacted] and Command Vision Center) to ensure a low-risk program

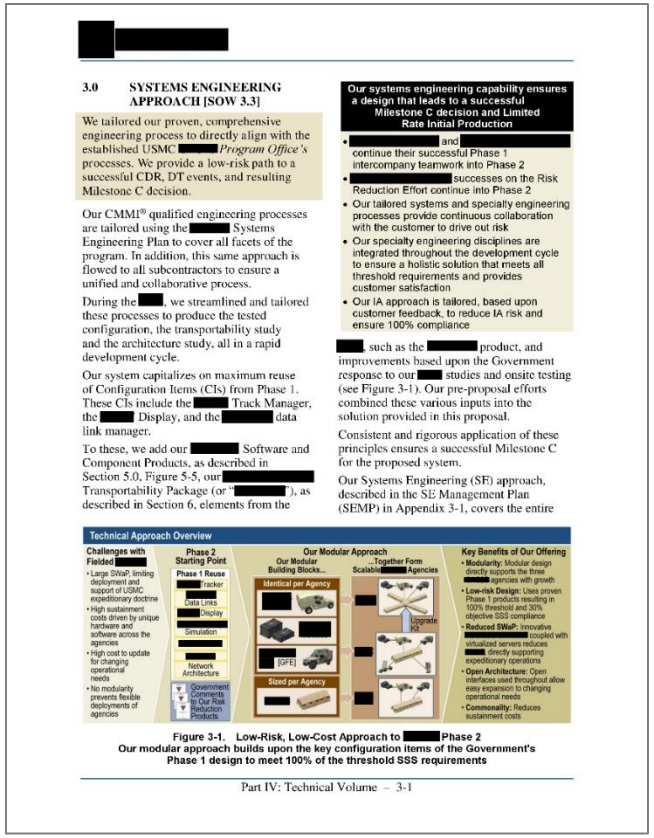
Using two company-funded [redacted] for [redacted] prototypes, we...

- ✔ Verify the ADP architecture prior to contract start
- ✔ Provide new multiple window screens
- ✔ Integrate ETRAC imagery processing/SID
- ✔ Provide UAV imagery processing (IR, SAR)

1

- Innovative template design
- Use of pull quotes

The 2000s



[redacted]

3.0 SYSTEMS ENGINEERING APPROACH [SOW 3.3]

We tailored our proven, comprehensive engineering process to directly align with the established USMC [redacted] *Program Office's* processes. We provide a low-risk path to a successful CDR, DT events, and resulting Milestone C decision.

Our CMMI® qualified engineering processes are tailored using the [redacted] Systems Engineering Plan to cover all facets of the program. In addition, this same approach is flowed to all subcontractors to ensure a unified and collaborative process.

During the [redacted], we streamlined and tailored these processes to produce the tested configuration, the transportability study and the architecture study, all in a rapid development cycle.

Our system capitalizes on maximum reuse of Configuration Items (CIs) from Phase 1. These CIs include the [redacted] Track Manager, the [redacted] Display, and the [redacted] data link manager.

To these, we add our [redacted] Software and Component Products, as described in Section 5.0, Figure 5-5, our [redacted] Transportability Package (or "[redacted]"), as described in Section 6, elements from the [redacted], such as the [redacted] product, and improvements based upon the Government response to our [redacted] studies and onsite testing (see Figure 3-1). Our pre-proposal efforts combined these various inputs into the solution provided in this proposal.

Consistent and rigorous application of these principles ensures a successful Milestone C for the proposed system.

Our Systems Engineering (SE) approach, described in the SE Management Plan (SEMP) in Appendix 3-1, covers the entire

Our systems engineering capability ensures a design that leads to a successful Milestone C decision and Limited Rate Initial Production

- [redacted] and [redacted] continue their successful Phase 1 intercompany teamwork into Phase 2
- [redacted] successes on the Risk Reduction Effort continue into Phase 2
- Our tailored systems and specialty engineering processes provide continuous collaboration with the customer to drive out risk
- Our specialty engineering disciplines are integrated throughout the development cycle to ensure a holistic solution that meets all threshold requirements and provides customer satisfaction
- Our IA approach is tailored, based upon customer feedback, to reduce IA risk and ensure 100% compliance

Figure 3-1. Low-Risk, Low-Cost Approach to [redacted] Phase 2
Our modular approach builds upon the key configuration items of the Government's Phase 1 design to meet 100% of the threshold SSS requirements

Part IV: Technical Volume – 3-1

- Consistent application of themes
- Improved crosswise integration of win themes through graphics, text and cost
- Big improvement in cost volumes
- Big improvement in IMP/IMS
- Visually, not much changed from the 1990s
- Use of the same tools (Word, PowerPoint, Illustrator) – just on faster PCs with different aesthetics

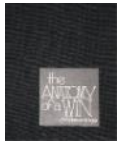
When Did We Start Doing it This Way?

Ideas we accept as Best Practice have early origins:

- Thesis sentences — ‘Writing the Technical Report,’ Nelson, 1940

- Modular proposals
- Text and graphics
- Thematic unity within modules
- Page allocations
- Storyboards
- Wall-based storyboard reviews
- Proposal theme — ‘Sequential Topical Organization of Proposals (STOP),’ Tracey, Rugh & Starkey, 1962

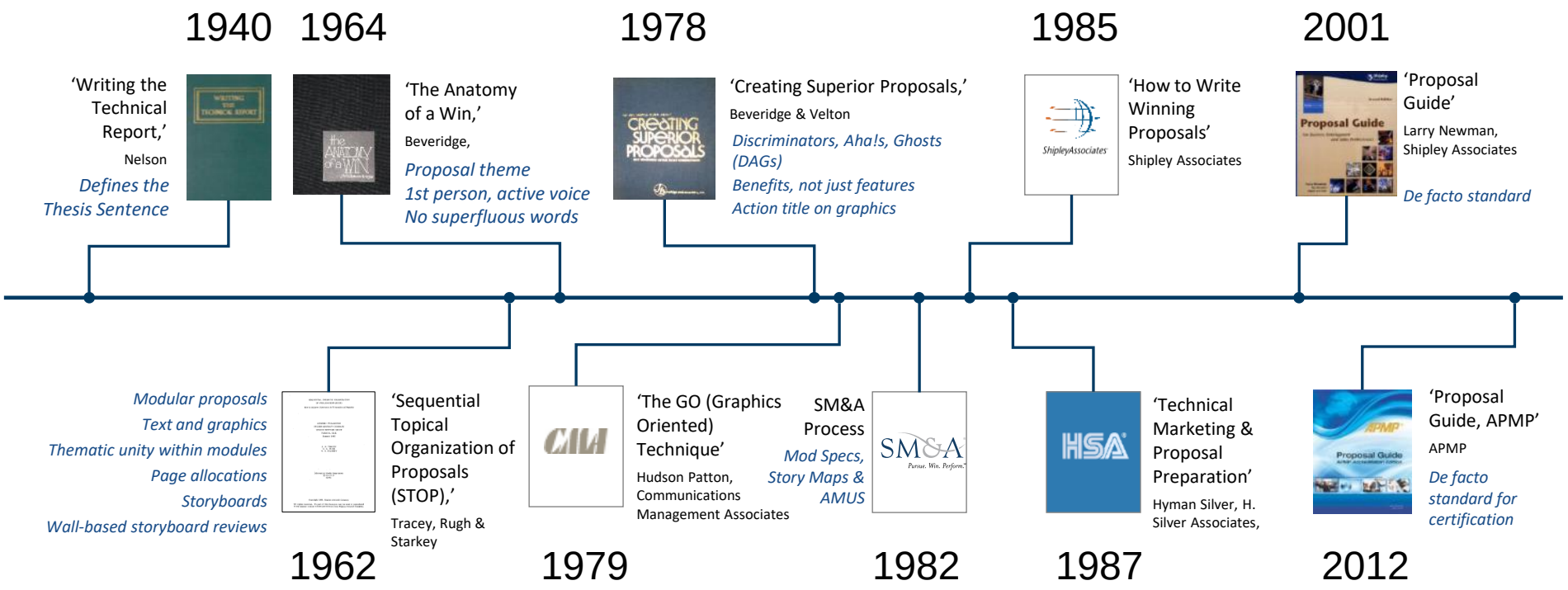
- 1st person, active voice
- No superfluous words
- Discriminators, Aha’s, Ghosts — ‘The Anatomy of a Win,’ Beveridge, 1964



- Benefits, not just features
- Action titles on graphics — ‘Creating Superior Proposals,’ Beveridge & Velton, 1978

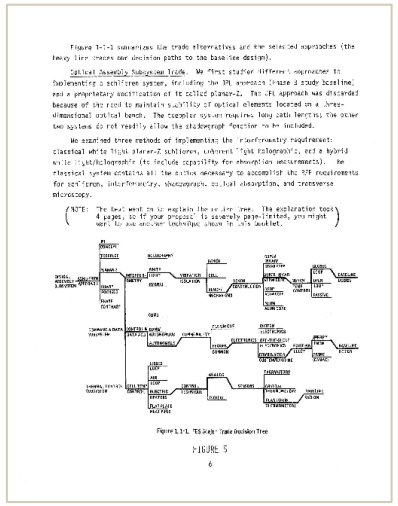
Current “Best Practice” Has Early Origins

…and have since become codified into command media

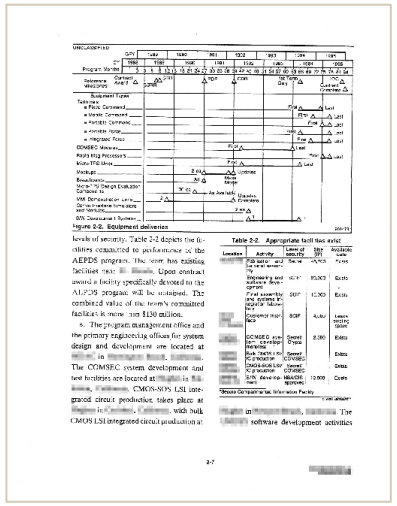


A slow evolution over 40 years…

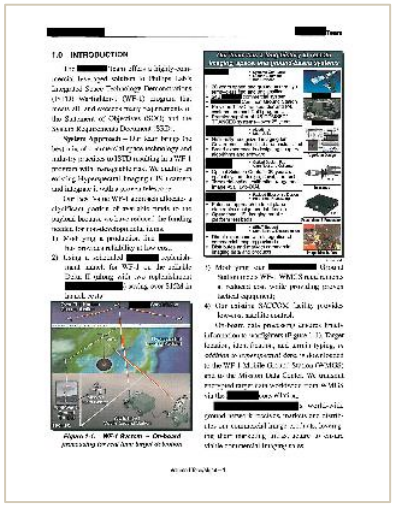
Through the Decades, Side by Side



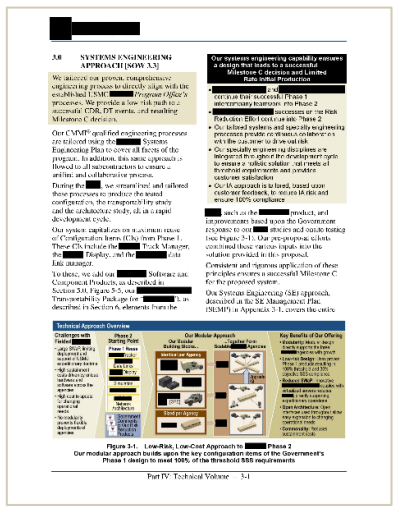
1970s



1980s



1990s



2000s

Large gaps in proposal tradecraft

Best practices

1995: DoD starts accepting 'paperless' proposals

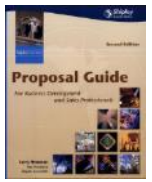
Rise of the Information Age

2004 APMP Certification begins

1989: APMP founded

1993 Birth of the World Wide Web

First graphical web browser



'Proposal Guide'

Larry Newman, Shipley Associates

De facto standard

Persuasion on the Cheap

Conventional wisdom now widely adopted in our profession as a best practice is that "a picture is worth a thousand words"[1], yet there is a visual persuasion gap

What We are Taught in School (K-to PostDoc)

Since the advent of Gutenberg's printing press, our culture of learning is about reading and writing

We are discouraged to learn how to read pictures (comics) in school

Where the World is Heading

Five exabytes (one billion gigabytes) of content were created between the birth of the world and 2003. In 2013, 5 exabytes of content were created each day[2], the vast majority of this as a visual representation of information

What We Need is Visual Literacy

We are flooded by information in images, from photographs to illustrations to flow charts to tables and information graphics, yet we were never taught how to read a picture in school
Is this skill so innate in our genetic makeup that it does not need to be taught?

Sources: 1) Arthur Brisbane, 1911 (exact reference cannot be cited with certainty) 2) Newstex, The Data Explosion in 2014 Minute by Minute – Infographic, October 21, 2014

What is this?

Trade Study

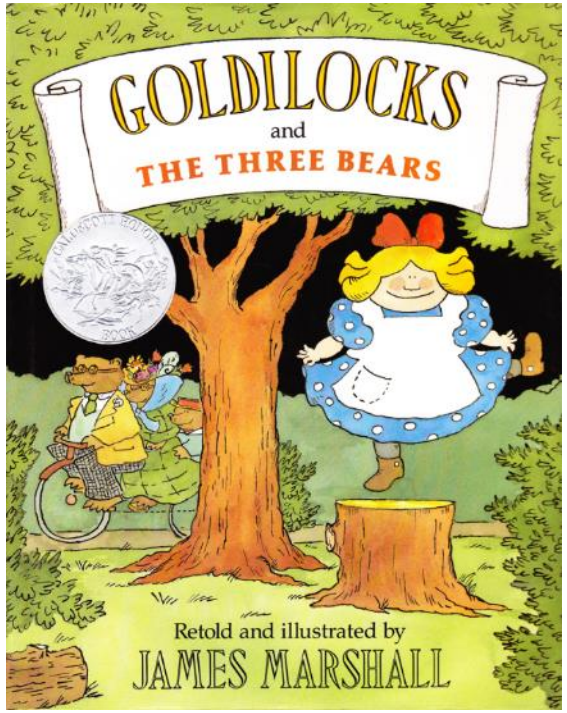
Product Feature	Defining Trait
A	Temperature
B	Dimensions
C	Modulus

Company	Defining Characteristic	Product Maturity	Confidence	Cost
Company Alpha	Light	8	High	Low
Company Beta	Dark	12	High	High
Company Gamma	Medium	11	Moderate	Medium
Company Delta	Exotic	3	Low	Medium-Low

Moral of the story: *Selfish disrespect of property rights can put you in peril*

Use of Narrative to Show Complexity

Reference



Memorable

Once upon a time, there was a little girl named Goldilocks. She went for a walk in the forest. Pretty soon, she came upon a house. She knocked and, when no one answered, she walked right in. At the table in the kitchen, there were three bowls of porridge. Goldilocks was hungry. She tasted the porridge from the first bowl.

"This porridge is too hot!" she exclaimed…

Not Memorable

Trade Study

Product Feature	Defining Trait
Porridge	T°
Chair	Size
Bed	Firmness

Character	Traits	Age	Hunger	Size
Goldilocks	Blonde	8	High	Petite
Papa	Brown	12	High	Big
Mama	Tawny	11	Moderate	Medium
Baby	Red-Brown	3	Low	Small

What is this?

Context: Challenge to address diminishing supplies of scarce resources

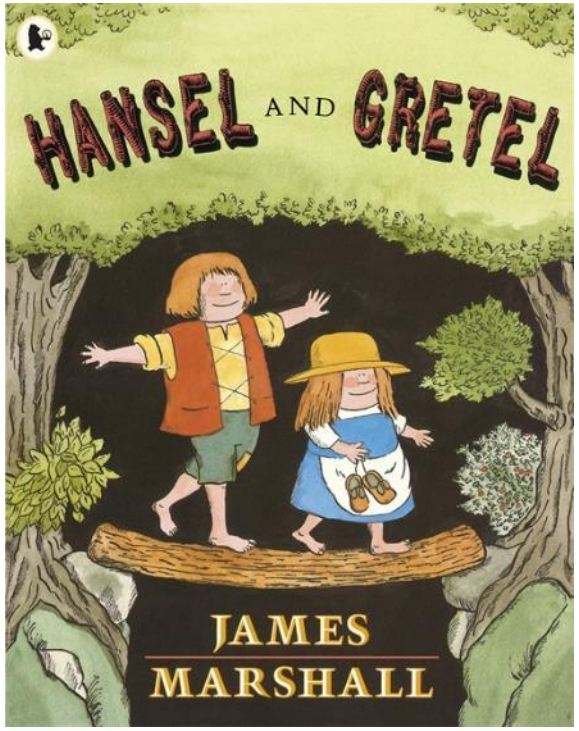
Supply Strategies

Competitor	Strategy	Teaming Approach	Critical Competency
Company Alpha	Monopolize supply	Go Alone	Profitability
Company Beta	Find adjacent sources	Team with similar size to take on larger competitors	Reliability
Company Gamma	Eliminate competitors	Team with similar size to take on larger competitors	Innovation
Company Delta	Find new sources	Opportunistic M&A	Past Performance

Morals of the story: *be cautious around strangers, don't judge solely on appearance, and beware of evil influences that lead you to abandon your values*

Use of Narrative to Show Complexity

Reference



Memorable

Once upon a time, there lived a poor woodcutter with his wife and two children. The little boy called Hansel, and the girl named Gretel. There was never much to eat in their home…

"At the crack of dawn, let's take the children down into the deepest part of the forest. We'll make a fire for them out there and give them each a crust of bread…they'll never find their way back home, and we'll be rid of them…"

Not Memorable

Supply Strategies

Strategy	Character	Critical Competency
Monopolize supply	Stepmother	Greed
Find adjacent sources	Hansel	Faith
Eliminate competitors	Gretel	Cleverness
Find new sources	Witch	Duplicity

What is this?

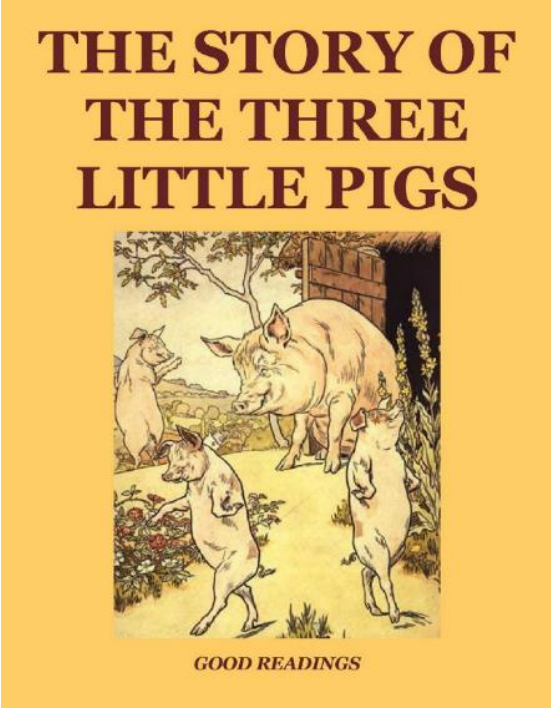
Evaluation of Competing Approaches

Main Choice	Company	Traits	Outcome
Bid at threshold KPPs	Company Alpha	Poor past performance	Lose
Bid above objective KPPs	Company Beta	Overpromising	Lose
IRAD investment to create low-risk bid above objective KPPs	Us	Practical & clever	Win
Bid below threshold KPPs	New Entrant	Overconfident	Embarrassed

Moral of the story: *hard work and dedication pay off; take the time and expense necessary to do things the right way. You may get by for awhile with shortcuts and shoddy work, but in the long run it will cost you.*

Use of Narrative to Show Complexity

Reference



Memorable

… Presently came along a wolf, and knocked at the door, and said, "Little pig, little pig, let me come in."

To which the pig answered, "No, no, by the hair on my chiny chin ."

The wolf then answered to that, "Then I'll huff, and I'll puff, and I'll blow your house in." So he huffed, and he puffed, and he blew his house in and ate up the little pig.

The second little pig met a man with a bundle of furze, and said, "Please…

Not Memorable

Evaluation of Competing Approaches

Main Choice	Name	Key Traits	Outcome
Mud (straw)	Browny	Wallowing, but disobedient	Rescued from imprisonment
Cabbage (Sticks)	Whitey	Greedy & insatiable	Rescued from imprisonment
Brick	Blacky	Practical & clever	Savior
Deceit, Huff and Puff	Wolf	Deceptive beyond own good	Scalded to death

Use of Narrative to Show Complexity

Narratives are Second Only to First-Hand Experience

- Direct experience produces “experiential knowledge”
- Analysis produces “evidentiary knowledge”
- Narratives bring both alive for readers not at the creation
- Captures complexity while communicating insights clearly
- Moves others to understanding and motivates behavior
- Provides the arc from mystery to discomfort to curiosity to credibility to empathy to solace to inspiration
- Raison d'être for graphics to convey facts, data and evidence, processes and frameworks and abstract concepts

REASONED, COMPELLING AND MEMORABLE

Use of Narrative to Show Complexity

We have a very hard job to perform

Our Audience	What We Want of the Audience	What Gets in Our Way
Mental capacity for processing information for most of us is 7, plus or minus 2 (2.5 bits)	Greater Knowledge transfer	Overly specified structure and other constraints imposed by the customer
Most evaluators have a day job with more things to do than time	Higher level of understanding	Complexity of subject and numerous subtleties
All proposals are greeted with skepticism, cynicism, lassitude, or derision (pick one)	Relief from boredom	Unclear burden of proof in sufficiency of data
	Longer retention	Conventional wisdom and over-reliance on best practices
	Fewer interpretative errors	

Source: Miller, George, “The Magical Number Seven, Plus or Minus Two: Some Limits on our Capacity for Processing Information, Psychological Review, 63, 81-97, 1956

Role Reversal

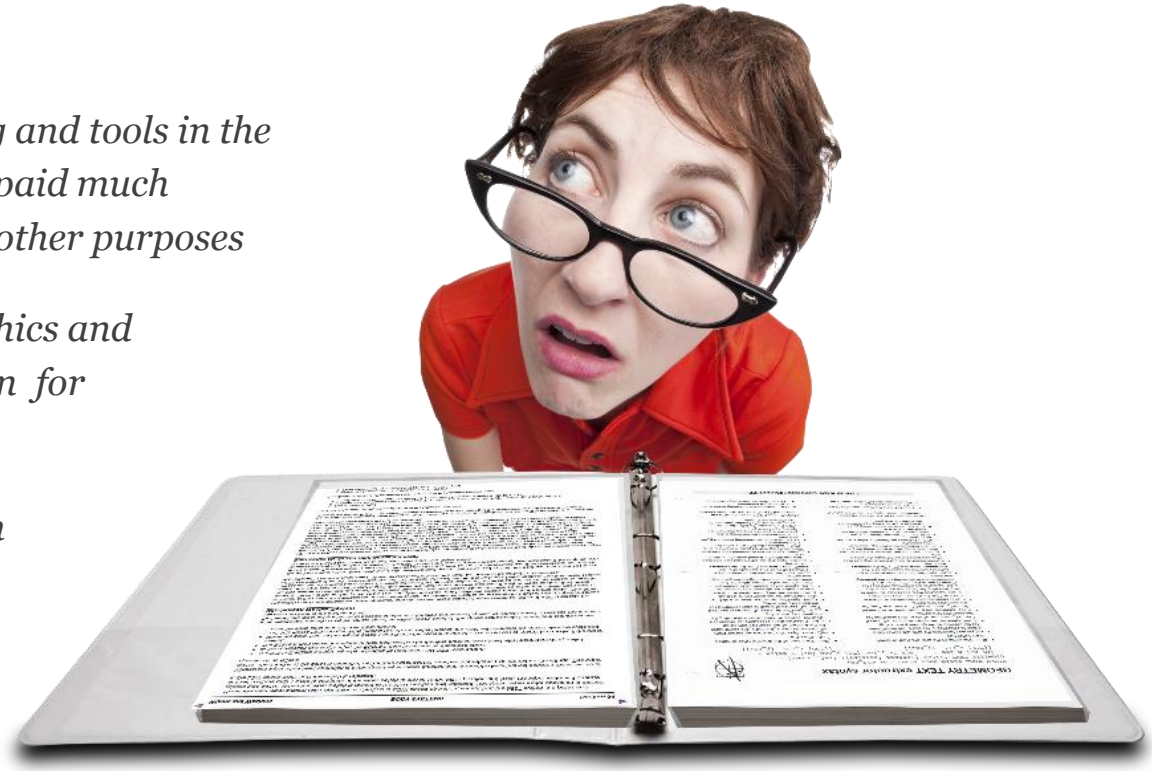
Time to re-examine the role of text in proposals, and incorporate new methods of the "art of narrative"

For the past 20 years we've incorporated state of the art thinking and tools in the creative act of graphics in our proposal tradecraft, but have not paid much attention to new methods for narratives now in common use for other purposes

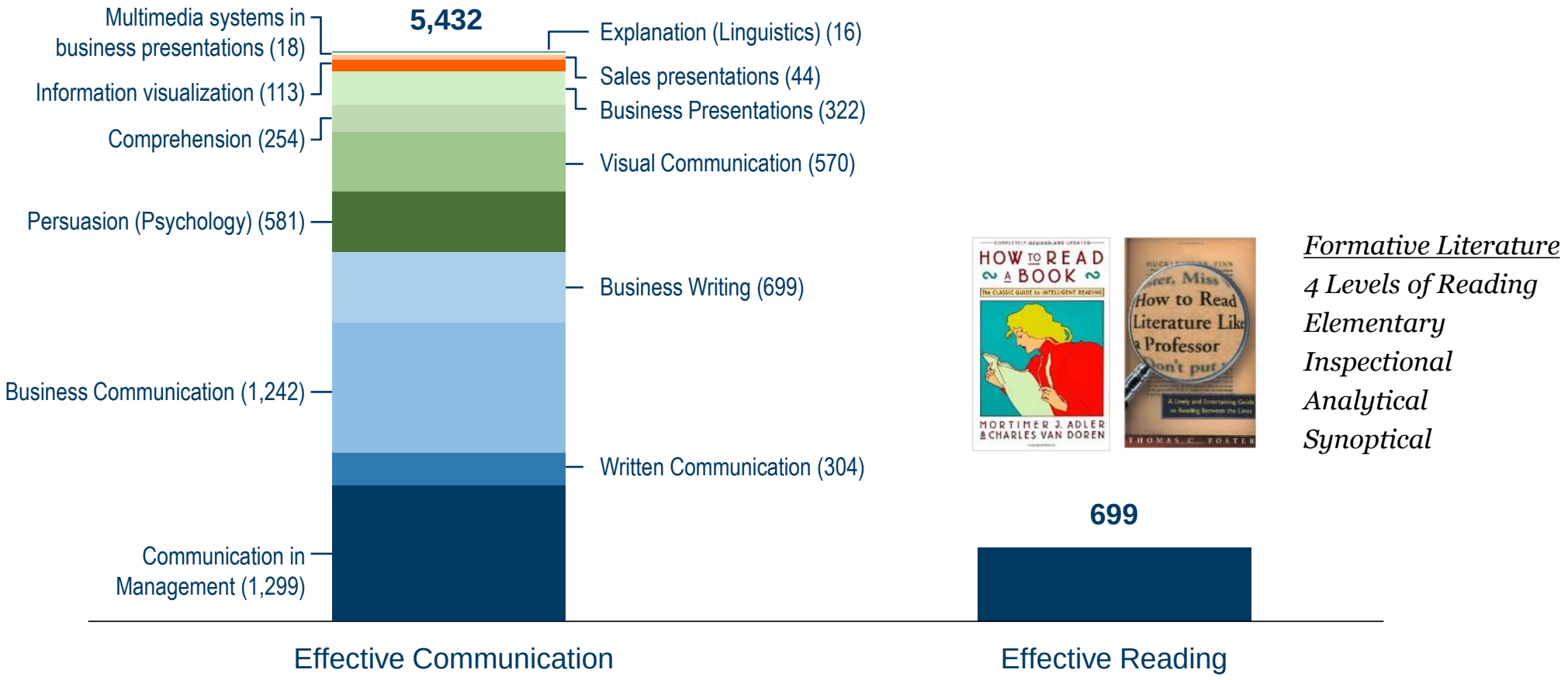
Lacking visual literacy as an innate skill, surplus of data in graphics and proliferation of meaning creates a burden on the reader to reason for him/herself.

Tracey and others in 1965 set out to solve this same problem with STOP to shift the burden of logical coherence back to the author.

Have We Come Full Circle?



Books by Subject (Library of Congress)



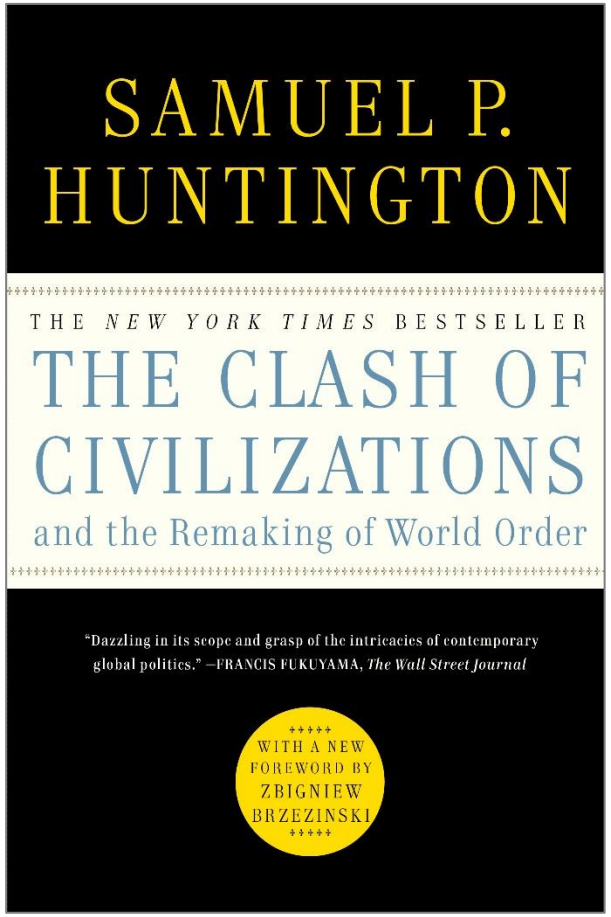
Formative Literature
4 Levels of Reading
Elementary
Inspectional
Analytical
Synoptical

Five Models of Non-Fiction Storytelling

Think of these as models for: Communication, Persuasion, Engagement and of course… information sharing (but in many cases, that's not really the most important function)

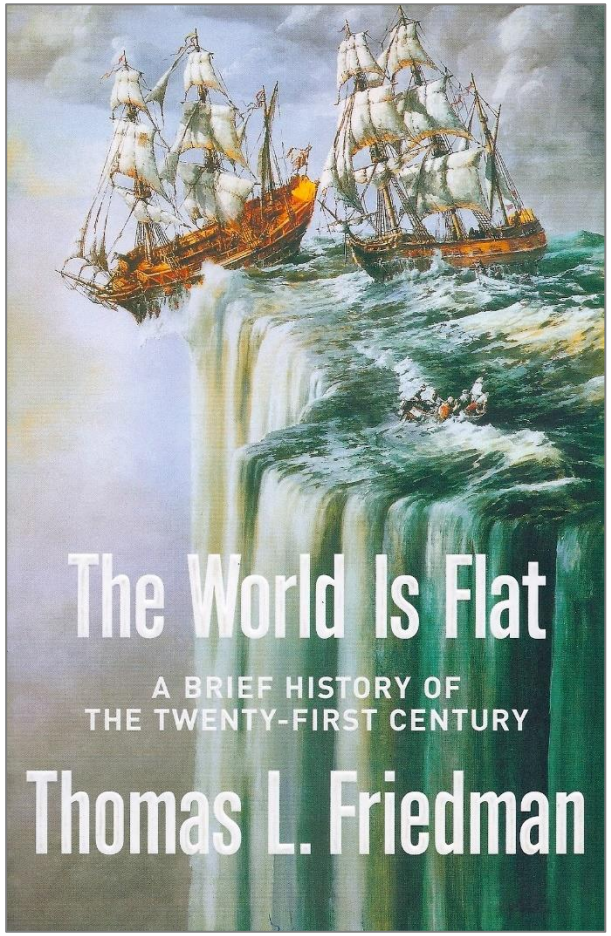
Iconic Social Science Argument Trajectory

- *What's the question/problem?*
- *Where does the question come from?*
- *What's the (hypothesized) answer?*
- *How did we arrive at that 'answer'?*
- *So what? If our answer is correct, what else of interest happens?*



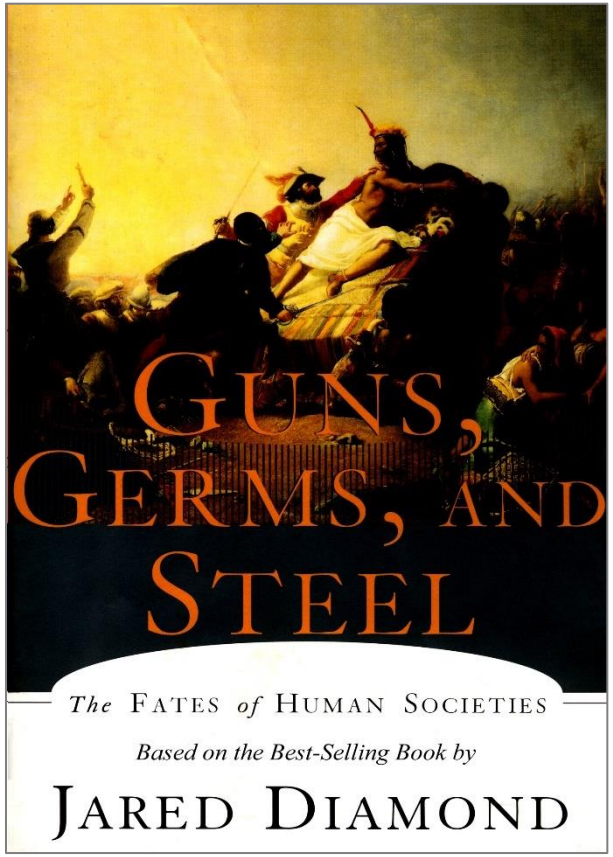
Medical Rounds

- *Presenting Snapshot, then SOAP*
- *Subjective*
- *Objective*
- *Assessment*
- *Plan*



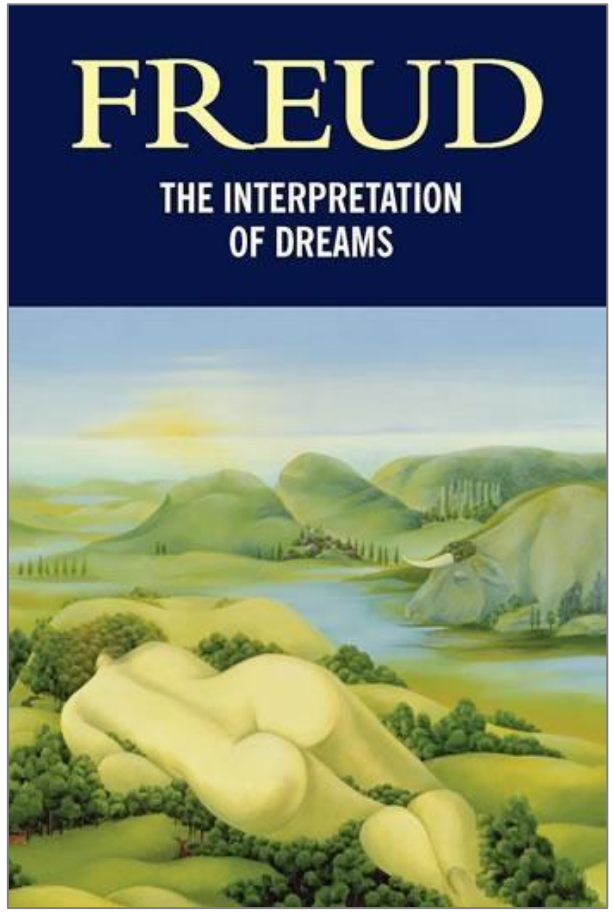
Iconic Inductive Reasoning Path

- *From Data Points, to Generalizations*
- *No 'theory' per se, at least not as guiding principle for the story*
- *The story emerges from the details*
- *The more data, the better*



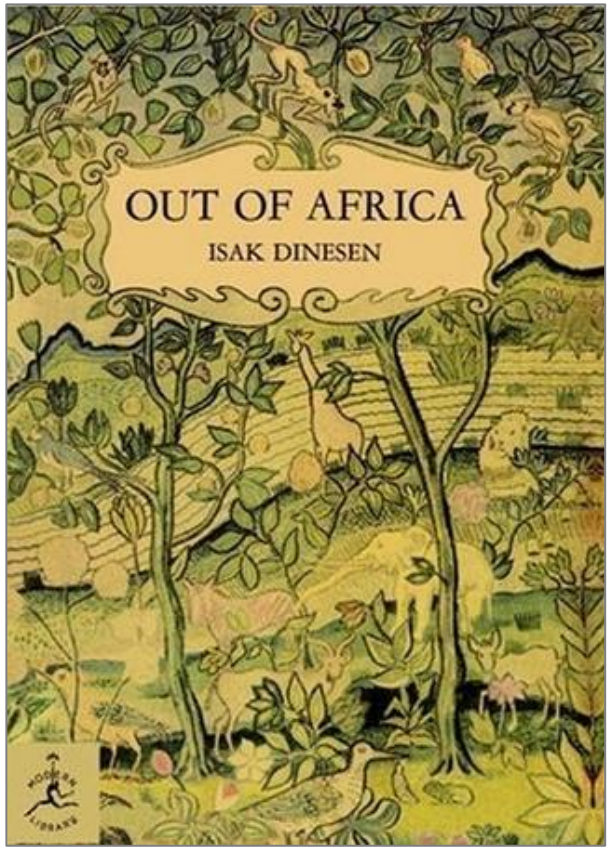
Iconic Deductive Reasoning Path

- *From Theory to Hypotheses*
- *A big 'story' generates expectations about what you will see in the world*
- *The details follow from the theory*
- *The more generative and precise the theory, the better*



Ethnography

- *'Deep' narrative*
- *'Embedded' storytelling — the storyteller puts herself in the position of the subject*
- *Capturing 'Culture' is more important than explicating causality*



Some Basic Comparisons

Model	Optimized For	Weakness	Exec Sum	Technical	Mgmt & PP	Cost
Social Science Argument	big claims	Overly reliant on systemic arguments	✓			
Medical Rounds	specific cases	hard to learn from comparative cases		✓	✓	✓
Induction	data mining	garbage in, garbage out, plus over fitting of data		✓		✓
Deduction	prediction	taking weak theories far too seriously		✓		✓
Ethnography	gestalt	unfalsifiable mush			✓	

Communication & Persuasion Has Changed

Memorable and Compelling

What's Next for our Industry?

Typical proposal for the last 10+ years

[redacted]

3.0 SYSTEMS ENGINEERING APPROACH [SOW 3.3]

We tailored our proven, comprehensive engineering process to directly align with the established USMC [redacted] *Program Office's* processes. We provide a low-risk path to a successful CDR, DT events, and resulting Milestone C decision.

Our CMMI® qualified engineering processes are tailored using the [redacted] Systems Engineering Plan to cover all facets of the program. In addition, this same approach is flowed to all subcontractors to ensure a unified and collaborative process.

During the [redacted], we streamlined and tailored these processes to produce the tested configuration, the transportability study and the architecture study, all in a rapid development cycle.

Our system capitalizes on maximum reuse of Configuration Items (CIs) from Phase 1. These CIs include the [redacted] Track Manager, the [redacted] Display, and the [redacted] data link manager.

To these, we add our [redacted] Software and Component Products, as described in Section 5.0, Figure 5-5, our [redacted] Transportability Package (or "[redacted]"), as described in Section 6, elements from the [redacted] such as the [redacted] product, and improvements based upon the Government response to our [redacted] studies and onsite testing (see Figure 3-1). Our pre-proposal efforts combined these various inputs into the solution provided in this proposal.

Our systems engineering capability ensures a design that leads to a successful Milestone C decision and Limited Rate Initial Production

- [redacted] and [redacted] continue their successful Phase 1 intercompany teamwork into Phase 2
- [redacted] successes on the Risk Reduction Effort continue into Phase 2
- Our tailored systems and specialty engineering processes provide continuous collaboration with the customer to drive out risk
- Our specialty engineering disciplines are integrated throughout the development cycle to ensure a holistic solution that meets all threshold requirements and provides customer satisfaction
- Our IA approach is tailored, based upon customer feedback, to reduce IA risk and ensure 100% compliance

Consistent and rigorous application of these principles ensures a successful Milestone C for the proposed system.

Our Systems Engineering (SE) approach, described in the SE Management Plan (SEMP) in Appendix 3-1, covers the entire

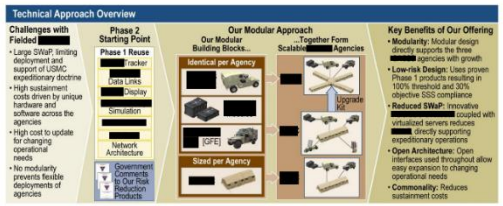
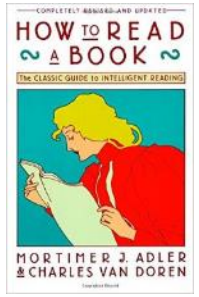


Figure 3-1. Low-Risk, Low-Cost Approach to [redacted] Phase 2
Our modular approach builds upon the key configuration items of the Government's Phase 1 design to meet 100% of the threshold SSS requirements

Tomorrow's proposal

Interesting Books

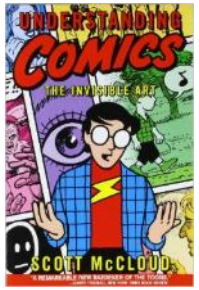
(Not a comprehensive catalog of worthwhile reading)



Adler, Mortimer J. and Charles Van Doren.

How to Read a Book: The Classic Guide to Intelligent Reading.

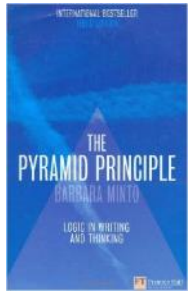
Touchstone, 1972.



McCloud,Scott.

Understanding Comics: The Invisible Art.

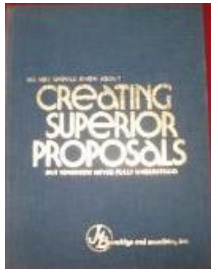
William Morrow Paperbacks, 1994.



Minto, Barbara.

The Pyramid Principle: Logic in Writing and Thinking, 3rd Ed.

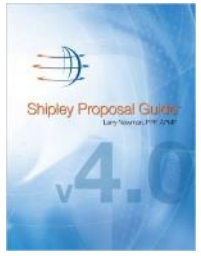
Prentice Hall, 2010.



Beveridge, James M and Edward J Velton.

All you should know about creating superior proposals, but somehow never fully understood.

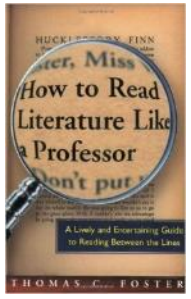
J. M. Beveridge and Associates, 1978.



Newman, Larry PFF APMP.

Shipley Proposal Guide, 4th Ed.

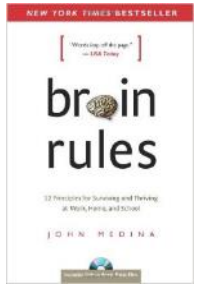
Shipley Associates, 2011.



Foster, Thomas C.

How to Read Literature Like a Professor: A Lively and Entertaining Guide to Reading Between the Lines.

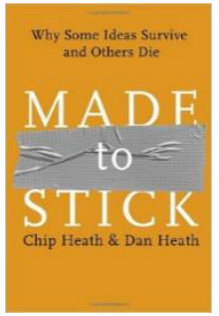
Harper Perennial, 2003.



Medina, John.

Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School.

Pear Press, 2009.



Heath, Chip and Dan Heath.

Made to Stick: Why Some Ideas Survive and Others Die.

Random House, 2007.

Interesting Articles

(Not a comprehensive catalog of worthwhile reading)

- *Angier, Natalie. "A new mind meld: Merger of science with humanities." International Herald Tribune, May 29, 2008.*
- *Fryer, Bronwyn. "Storytelling That Moves People: A Conversation with Screenwriting Coach Robert McKee." Harvard Business Review, June 2003.*
- *Gurri, Martin, Craig Denny, and Aaron Harms. "Our Visual Persuasion Gap." Parameters. Spring 2010 (2010): 101-109*
- *Miller, George A. "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information." The Psychological Review. Vol. 63 (1956): 81-97*
- *Randall, Doug and Aaron Harms. "Using Stories for Advantage." Strategy and Leadership. Vol. 40-1 (2012): 21-26*
- *Tracey, J.R., D.E. Rugh and W.S. Starkey. "Sequential Thematic Organization Of Publications (STOP): How to Achieve Coherence in Proposals and Reports." Journal of Computer Documentation. Vol. 23-3 (1965): 4-68*

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