IntegratedEA '08
Enterprise Architecture Conference

This presentation is from the 2008 Integrated EA Conference

The 2009 event will be held Feb 24-25

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CIO/NII Enabling Net-Centric Operations

Department of Defense Enterprise Architecture Initiatives

Integrated EA ’08

February 2008

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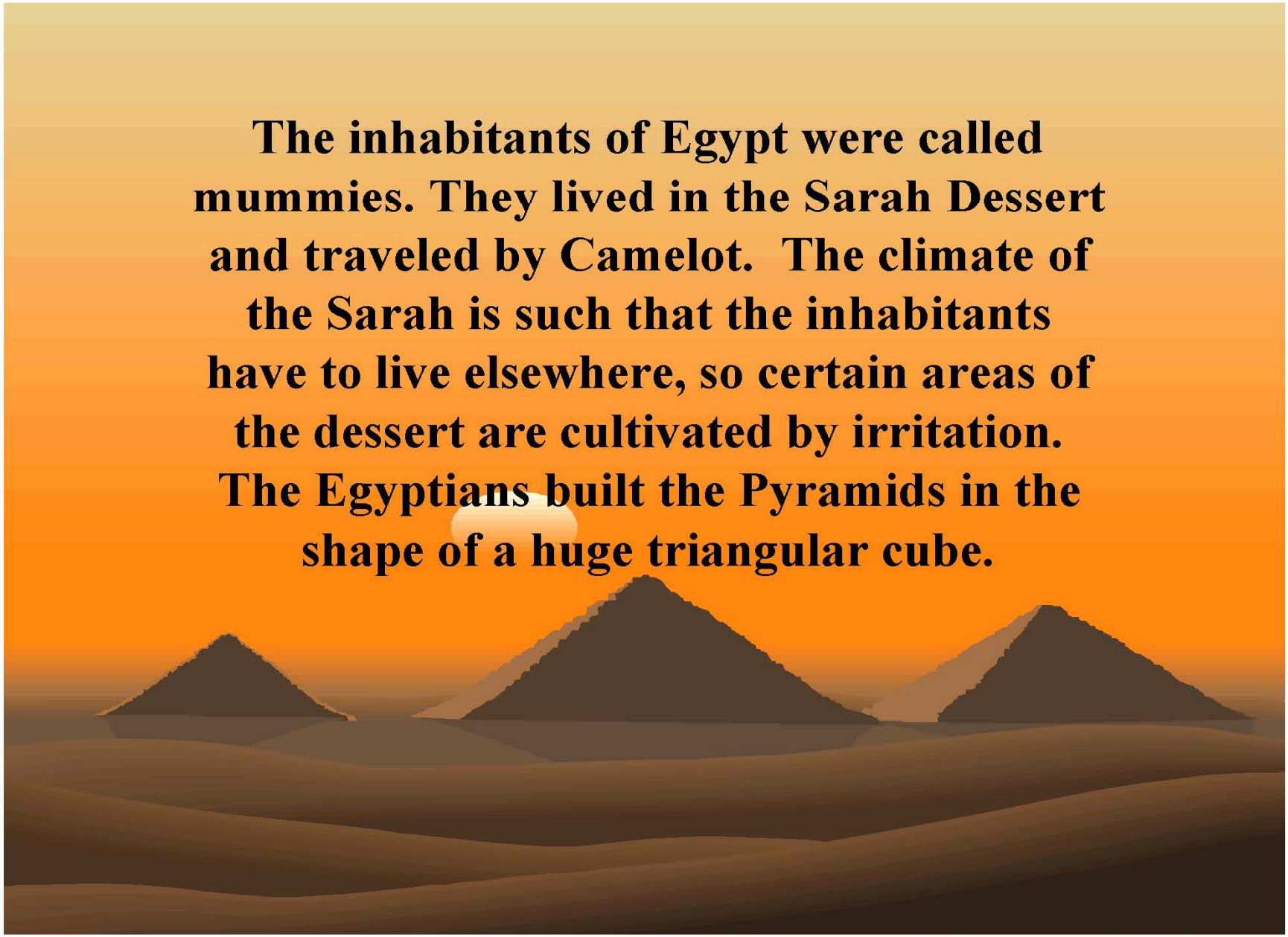
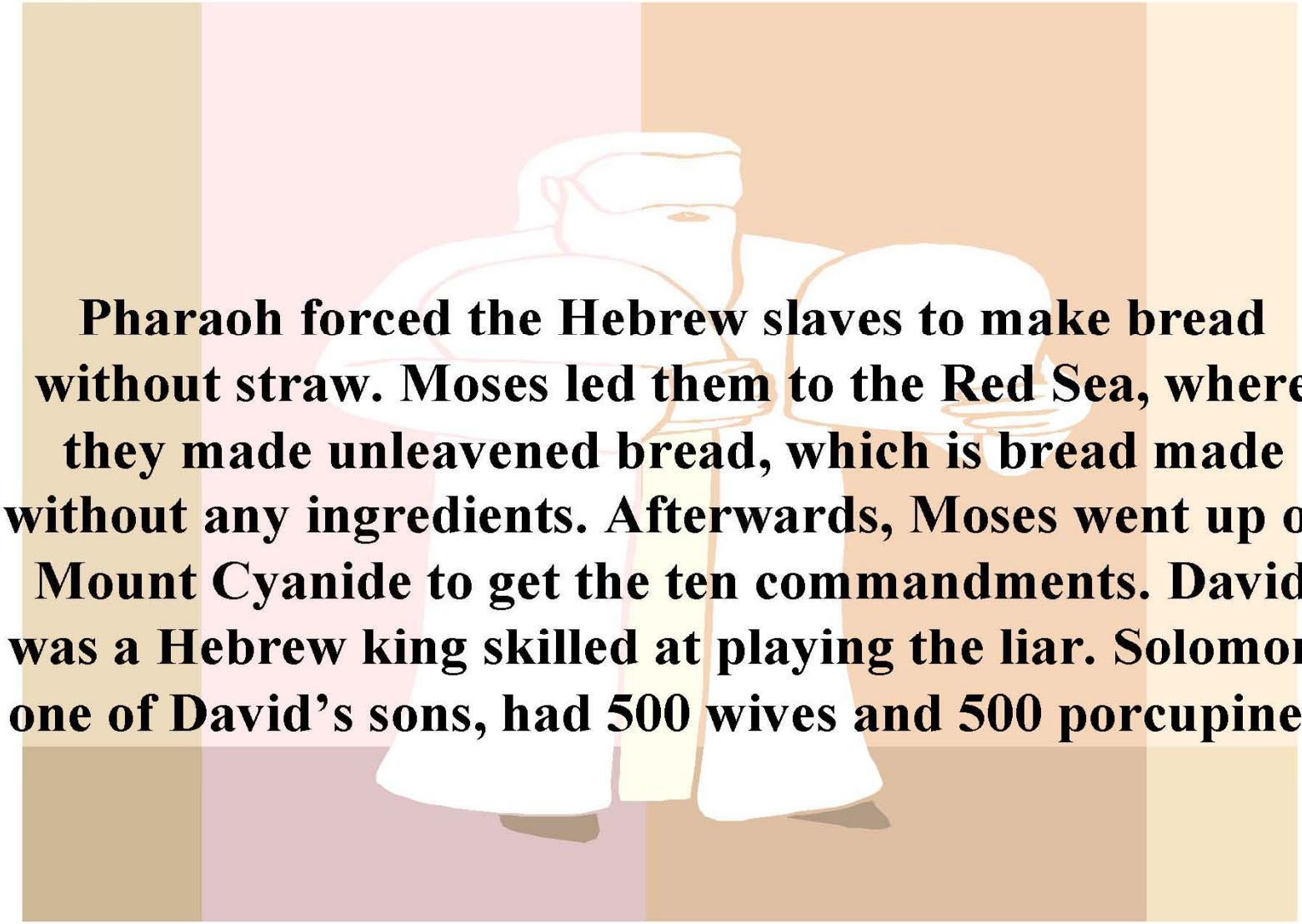
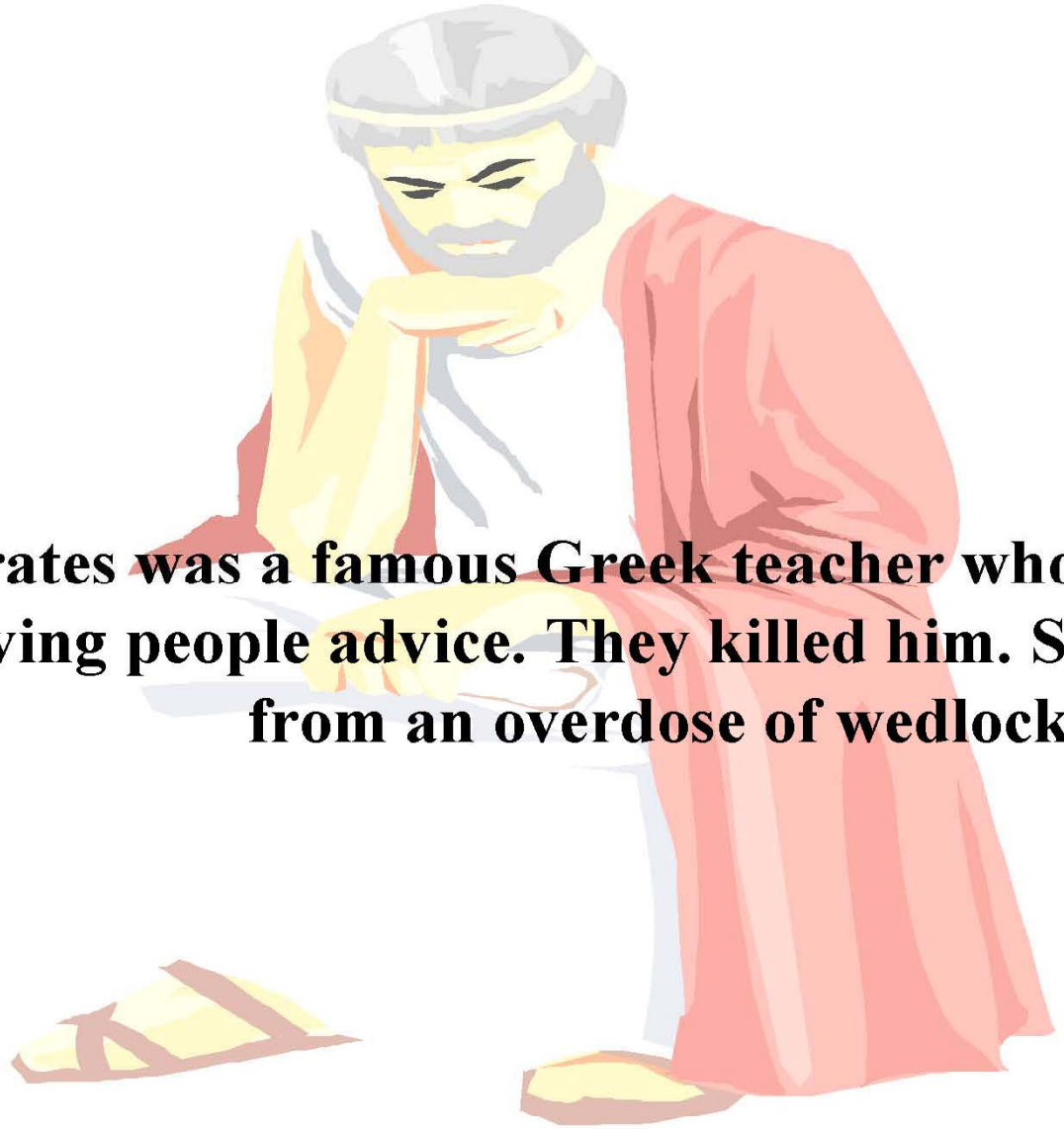
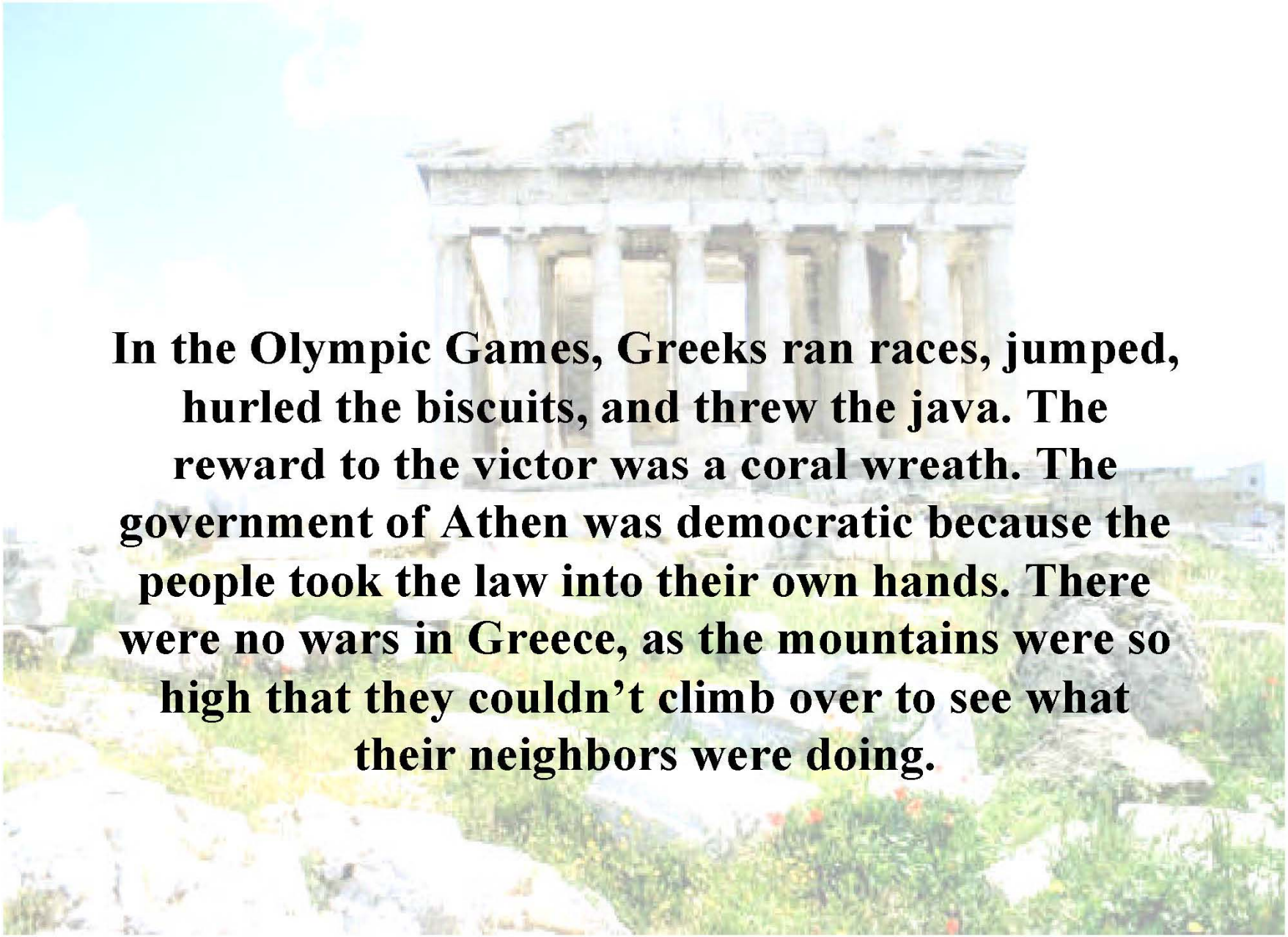

The inhabitants of Egypt were called mummies. They lived in the Sarah Dessert and traveled by Camelot. The climate of the Sarah is such that the inhabitants have to live elsewhere, so certain areas of the dessert are cultivated by irritation. The Egyptians built the Pyramids in the shape of a huge triangular cube.



Pharaoh forced the Hebrew slaves to make bread without straw. Moses led them to the Red Sea, where they made unleavened bread, which is bread made without any ingredients. Afterwards, Moses went up on Mount Cyanide to get the ten commandments. David was a Hebrew king skilled at playing the liar. Solomon, one of David's sons, had 500 wives and 500 porcupines.



Socrates was a famous Greek teacher who went around giving people advice. They killed him. Socrates dies from an overdose of wedlock.



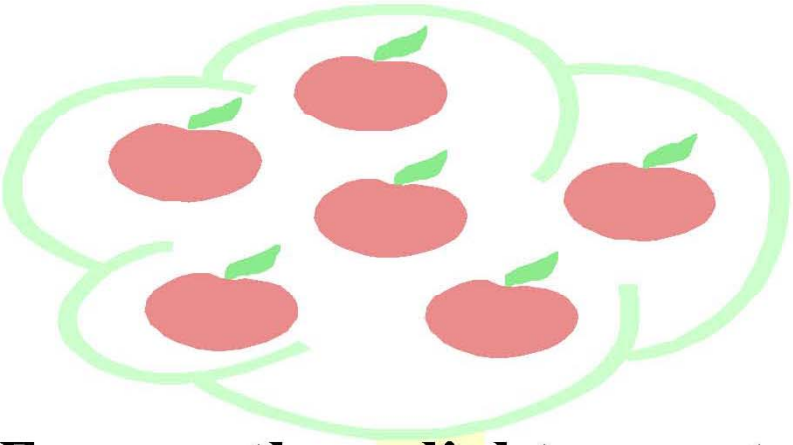
In the Olympic Games, Greeks ran races, jumped, hurled the biscuits, and threw the java. The reward to the victor was a coral wreath. The government of Athen was democratic because the people took the law into their own hands. There were no wars in Greece, as the mountains were so high that they couldn't climb over to see what their neighbors were doing.

History call people Romans because they never stayed in one place for very long. At Roman banquets, the guests wore garlic in their hair. Julius Caesar extinguished himself on the battlefields of Gaul. The Ides of March killed him because they thought he was going to be made king. Nero was a cruel tyrany who would torture his poor subjects by playing the fiddle to them.

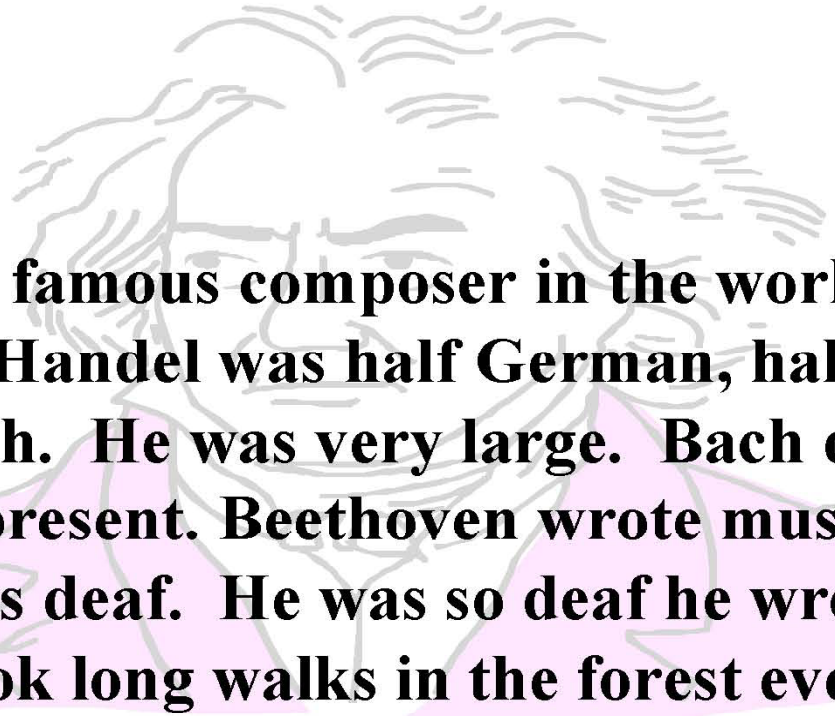
Martin Luther was nailed to the church door at Wittenberg for selling papal indulgences. It was the painter Donatello's interest in the female nude that made him the father of the Renaissance. It was an age of great inventions and discoveries. Gutenberg invented Bible. Sir Walter Raleigh is a historical figure because he invented cigarettes. Another important invention was the circulation of blood. Sir Francis Drake circumcised the world with a 100-foot clipper.

The government of England was a limited mockery. Henry VIII found walking difficult because he had an abbess on his knee. Queen Elizabeth was the "Virgin Queen." As a queen she was a success. When Elizabeth exposed herself before her troops, they all shouted "hurrah." Then her navy went out and defeated the Spanish Armadillo.

The greatest writer of the Renaissance was William Shakespear. Shakespear never made much money and is famous only because of his plays. He lived in Windsor with his merry wives, writing tragedies, comedies and errors. In one of Shakespear's famous plays, Hamlet rations out his situation by relieving himself in a long soliloquy. In another, Lady Macbeth tries to convince Macbeth to kill the King by attacking his manhood. The next great author was John Milton. Milton wrote "Paradise Lost." Then his wife dies and he wrote "Paradise Regained."

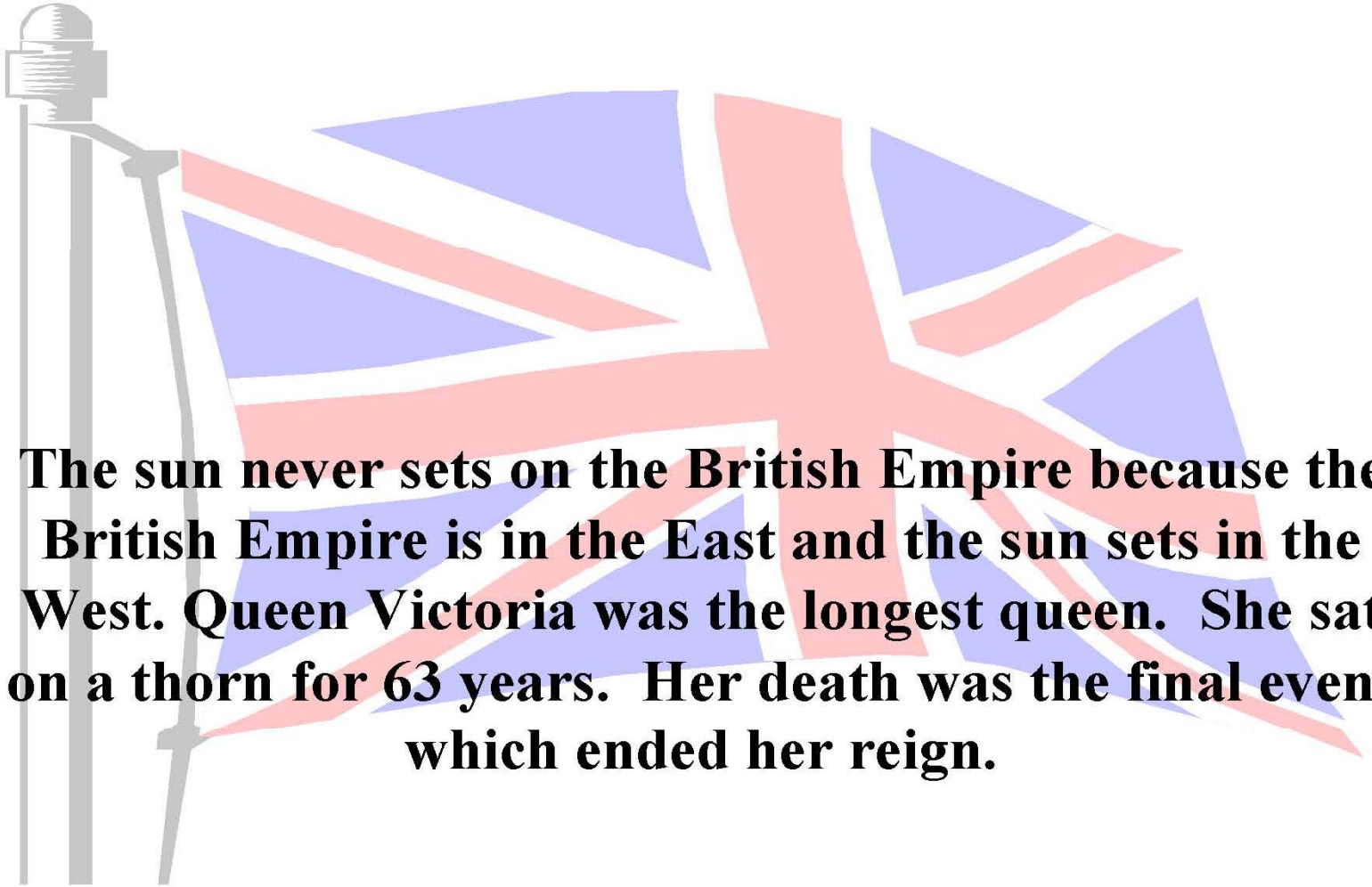


Meanwhile in Europe, the enlightenment was a reasonable time. Voltare invented electricity and also wrote a book called "Candy". Gravity was invented by Issac Walton. It is chiefly noticeable in the Autumn, when the apples are falling off the trees.



Bach was most famous composer in the world, and so was Handel. Handel was half German, half Italian and half English. He was very large. Bach died from 1750 to the present. Beethoven wrote music even though he was deaf. He was so deaf he wrote loud music. He took long walks in the forest even when everyone was calling for him. Beethoven expired in 1827 and later died for this.

France was in a very serious state. The French Revolution was accomplished before it happened. During the Napoleonic Wars, the crowned heads of Europe were trembling in their shoes. Then the Spanish gorrilas came down from the hills and nipped at Napolean's flanks. Napoleon became ill with bladder problems and was very tense and unrestrained. He wanted an heir to inheret his power, but since Josephine was a baroness, she couldn't bear him any children.



The sun never sets on the British Empire because the British Empire is in the East and the sun sets in the West. Queen Victoria was the longest queen. She sat on a thorn for 63 years. Her death was the final event which ended her reign.

The invention of the Internet by Al Gore and the DoDAF caused networks to spring up everywhere. Enterprise Architecting as discovered and mandated by OMB will eliminate all inefficiency, waste, fraud and abuse in the US Government. The two major causes of Global Warming are bovine flatulence and DoDAF products. And Karl Marx became one of the Marx Brothers, and they all now work in DoD.

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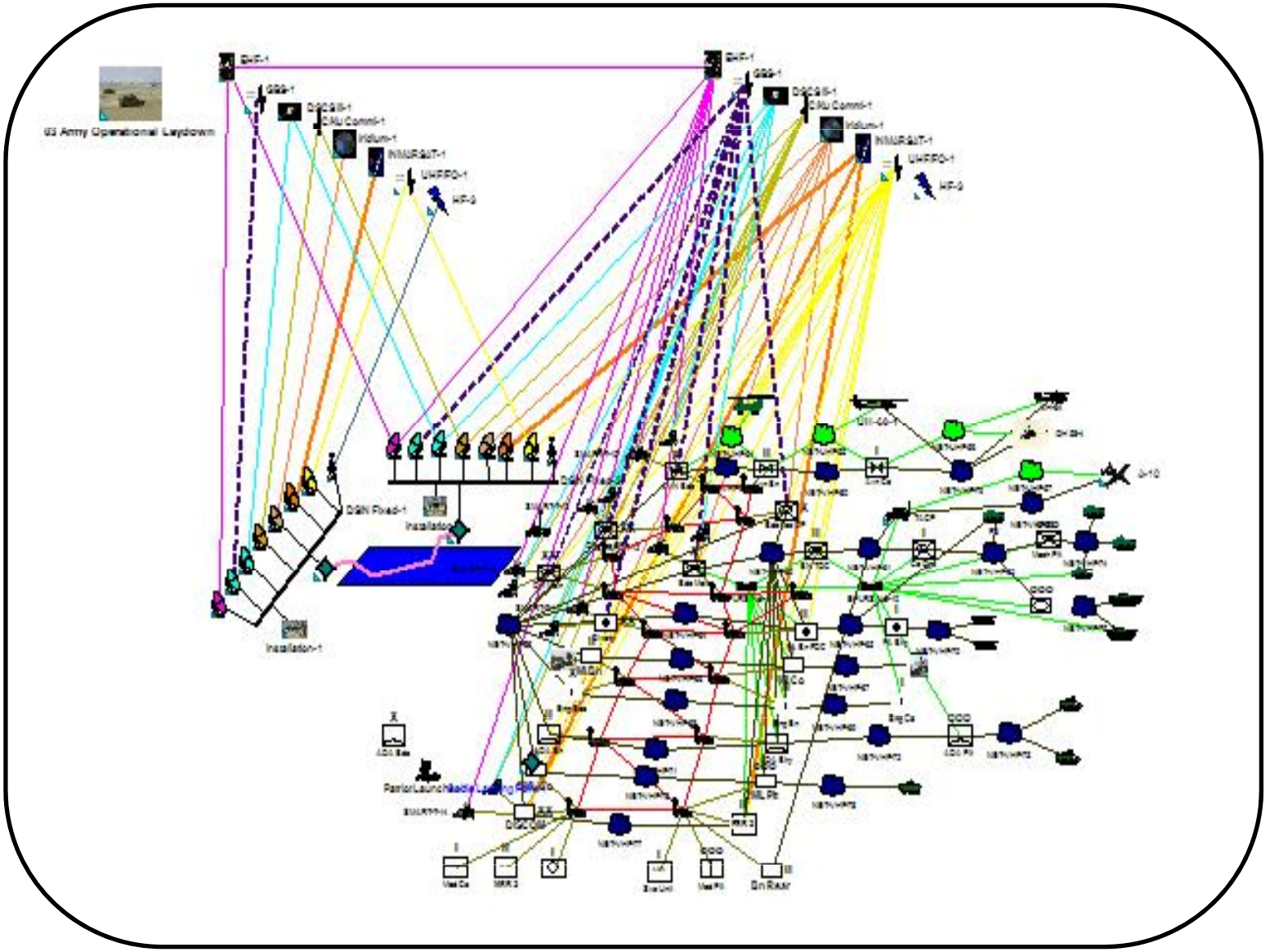
VIEWS OF THE ENTERPRISE

Our Enterprise is networked people, organizations & technology that enable an integrated, highly capable warfighting team.

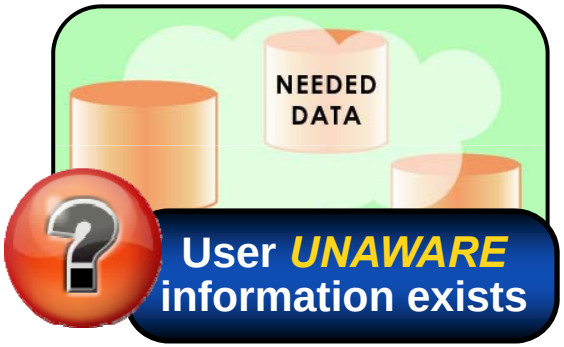
Point to Point



CURRENT INFORMATION SHARING CHALLENGES

NET-CENTRIC DATA STRATEGY TENETS

IMPLEMENTATION APPROACHES



VISIBLE → *Advertise Information Holdings ("Tag" Data)*

ACCESSIBLE → *Web Enable Sources*
Remove Impediments
"Need to Share"

UNDERSTANDABLE → *Communities of Interest (COIs)*
Shared Vocabularies

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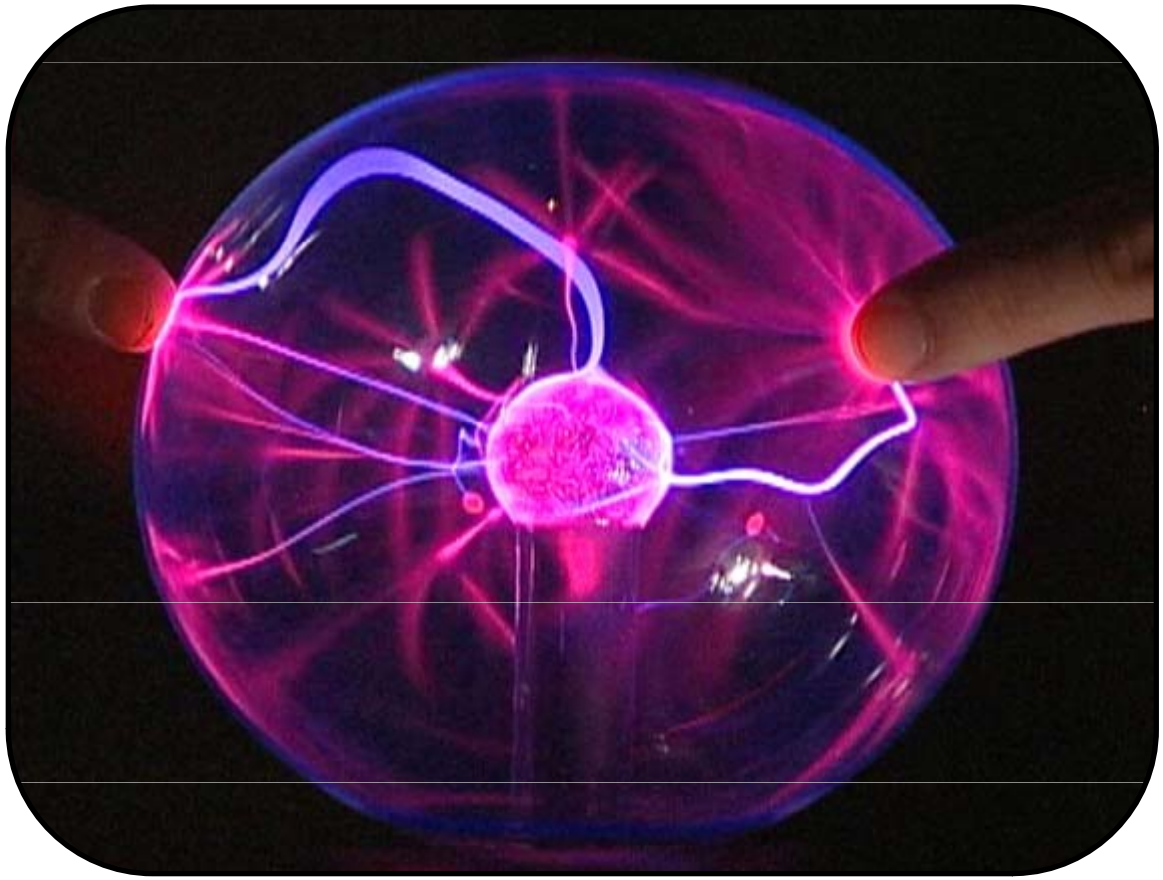
Idealized Net-Centric



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Topics

- **Architecting & Systems Engineering: Complementing Activities**
- **Training & Credentialing: Institutionalizing the Profession**
- **Architecture Federation: Managing Decentralized Execution**
- **DoDAF v2.0: Supporting "Fit for Purpose" Architectures and Defining a Net-Centric Environment**

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The Architecting Thesis

(or Why do we practice architecting?)

- All systems* have architecture — intentionally architected or not.
- The architecture of a system is the primary determinant of its behavior.
- If we can make apparent the architecture of a system, then we can understand, affect, or manage that architecture in order to achieve desired behavior. (Improved Effectiveness or Efficiency)
- Architect's goal is two-fold:
  - to understand and predict the behavior of systems not yet constructed.
  - to understand and affect the behavior of the systems we construct.

If you don't "control" the architecture of your system, then that architecture will control your system!

* "System" in it's largest sense (e.g. enterprise, org., mission thread, etc.)

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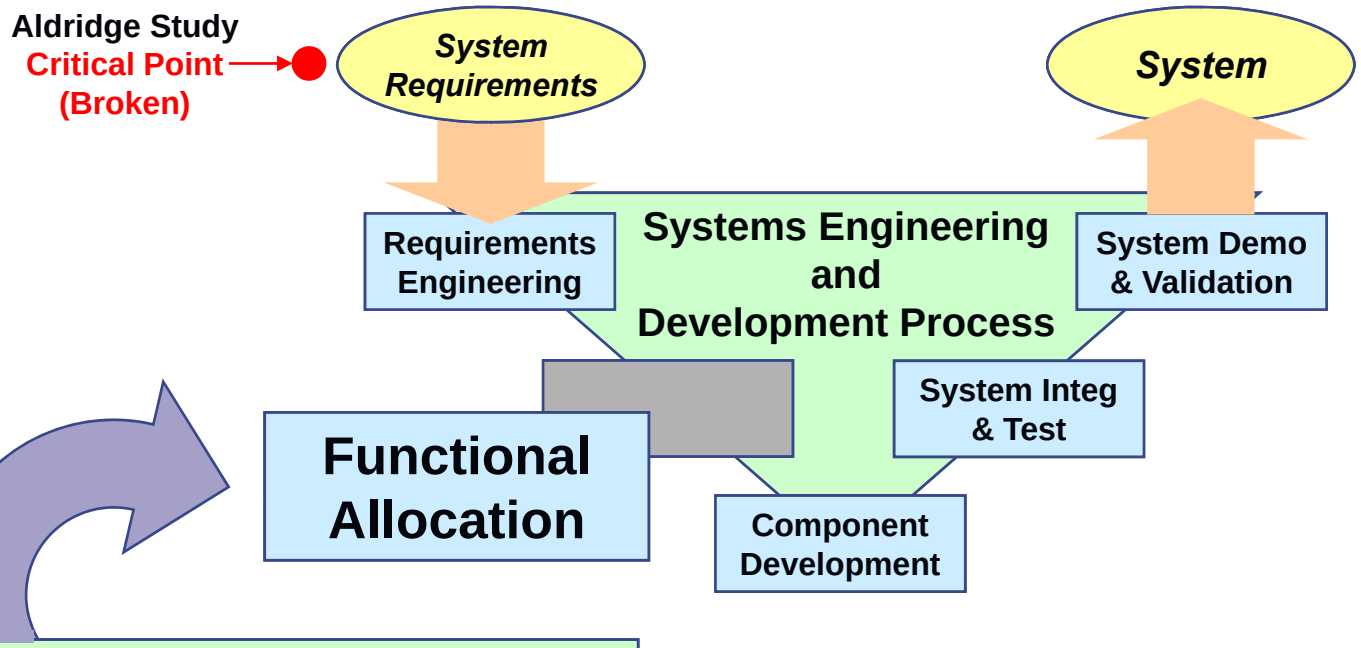
Architecting and Engineering

" Who's on first ?"

Traditional Role of Systems Architecting within SE paradigm



(Systems Architecting) Functional: Analysis, Architecting, and Allocation employs the Architecting Paradigm of Synthesis of Form

Realms of Architecting in the Enterprise

Capability Architecting

Translate capability needs into enterprise engineering requirements

Strategic Architecting

Plan the alignment of resources with corporate strategy

Critical point

Core Principles and Practices of Architecting

Solutions Architecting

Allocate engineering requirements to system/product components

Operational Architecting

Select and integrate operational forces into an effective Mission focused structure, and TTP development

The practice of architecting, like the practice of engineering, is divided into a number of sub disciplines — all of which apply the same fundamental body of architecting knowledge. Differing contexts and objectives in each architecting domain lead to focused results which vary extensively between the domains.

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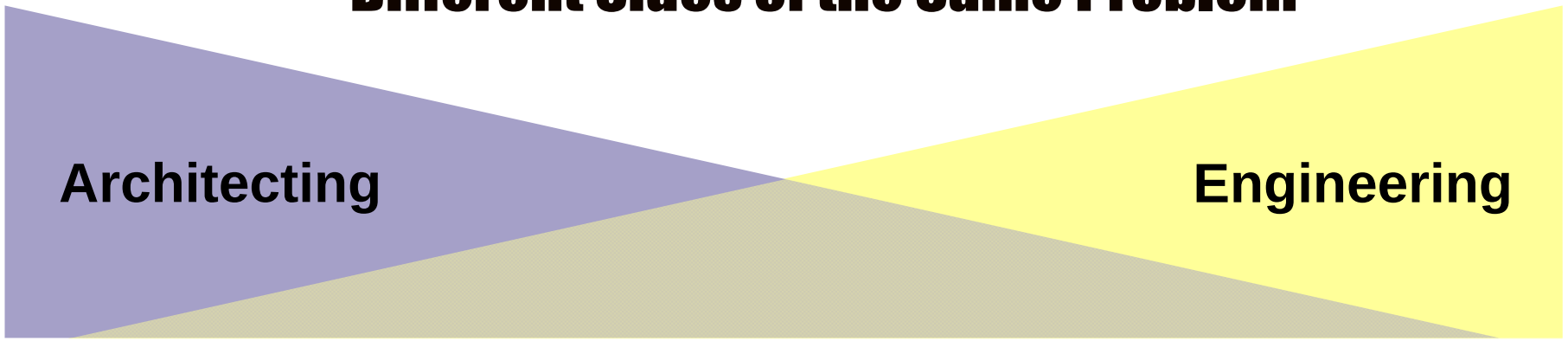
Architecting and Engineering: Two Very Different Sides of the Same Problem

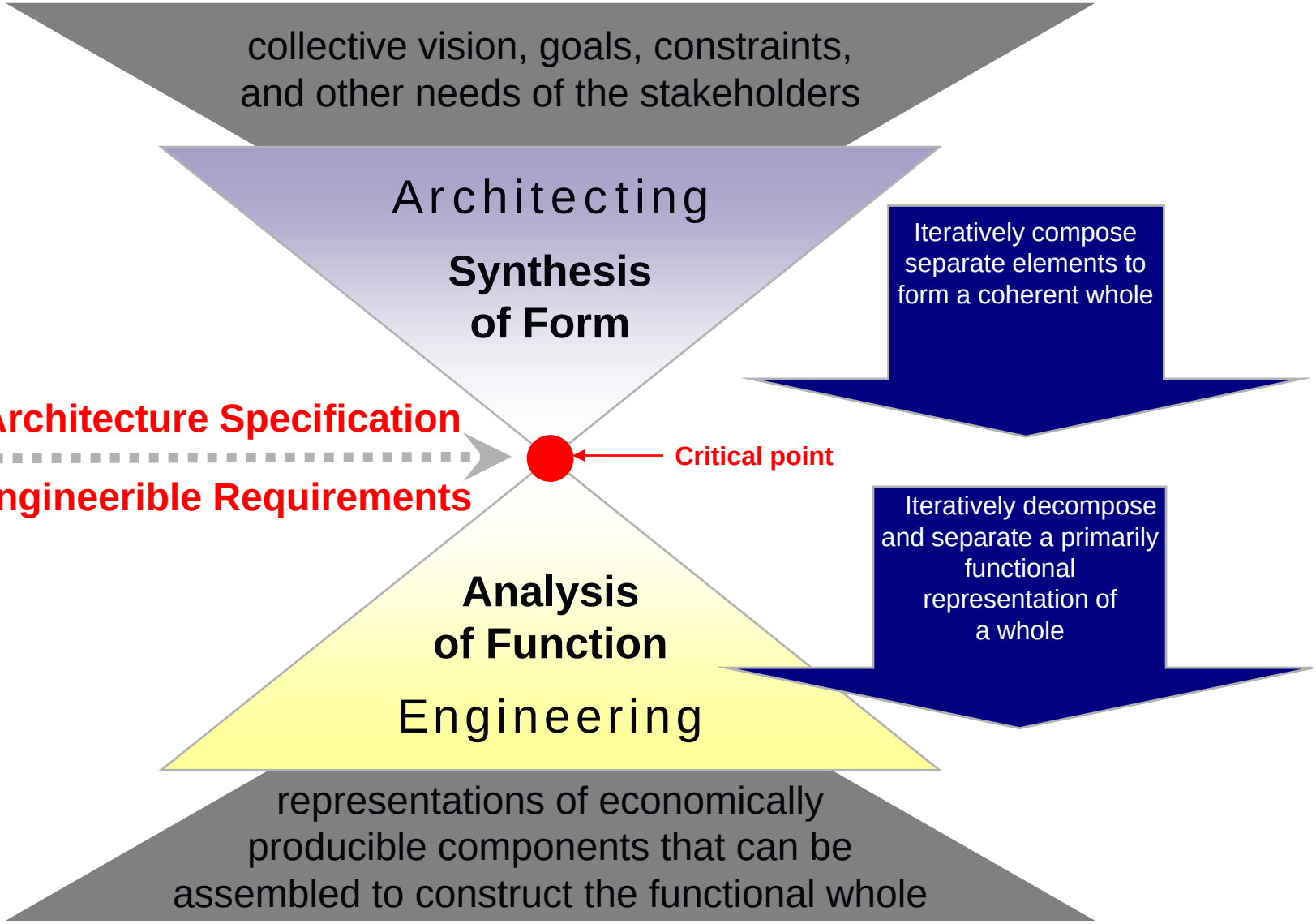


Synthesis of Form ► ***◄ Analysis of Function***

- Holistic
- Manipulates complexity
- Satisfying - client satisfaction
- Qualitative worth
- Abductive
- Heuristics
- Value in the “what”
- Emphasis on meaning (semantics)
- External interfaces - Openness
- Abstraction; notional
- Produces architectural specification
- Architectural “design”

- Reductionist
- Reduces complexity
- Optimizing - technical optimization
- Quantitative costs
- Deductive
- Algorithms
- Value in the “how”
- Emphasis on arrangement (syntax)
- Internal interfaces - Boundedness
- Precision; exact
- Produces implementation specification
- Engineering “design”

Architecting and Engineering — Two Sides of the Same Problem



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Architecting ≠ System's Engineering
(Both do design, but....)

Architects design through Synthesis

- Through trials guided by heuristics, architects compare forms until a best-fit emerges that satisfies conflicting needs. ***More Qualitative***

Engineers design through Analysis

- Through analysis engineers tradeoff conflicting requirements until an optimal solution is determined. ***Highly Quantitative***

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A Proliferation of "Architects"

- One result of confusing architecting and designing is that people who previously were *designers* now refer to themselves as *architects* — without any change in skill, objective or approach!
- Anyone who previously did design (*network designer, system designer, application designer, solution designer, data designer, business designer, security designer, process designer,* etc.) is now an "architect" (*network architect, system architect, application architect, solution architect, data architect, business architect, security architect, process architect,* etc.)
- Some people intuitively recognized the different role, others ….?
- Serious implications! Quality of architectural products? Number of qualified architects(?). Unmet expectations!

Define "core competencies", establishing certification, credentialing, and degree (?) programs.

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Possible "Architect Certifications"

TIER	LEVEL		
3 - Management	Level 1	Level 2	Level 3
2 - Analysis	Level 1	Level 2	Level 3
1 - Development	Level 1	Level 2	Level 3

Core Competencies Table

Knowledge	Skills	Abilities
A body of information applied directly to the performance of a function.[1]	**An observable competence to perform a learned psychomotor act.[2]**	**Competence to perform an observable behavior or a behavior that results in an observable product.[2]**
❒Architecture development ❒Architecture analysis ❒Vertical area of knowledge ❒Business processes ❒Information technology	❒Modeling techniques ❒Application of frameworks ❒Application of tools ❒Requirements gathering ❒Analysis techniques	❒Communication (verbal/written/presentation) ❒Abstract analytical thinking ❒Quickly grasp concepts ❒Teamwork ❒Innovative

[1] U.S. Office of Personnel Management, *Qualification Standards for General Schedule Positions, General Policies and Instructions, Part C. and D.*, http://www.opm.gov/qualifications/SEC-II/s2-c-d.asp

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Architecture Federation

Registration

- *Discovery/Re-use*
- *Availability*
- *Location*
- *Owner*
- *Development*
- *Description*

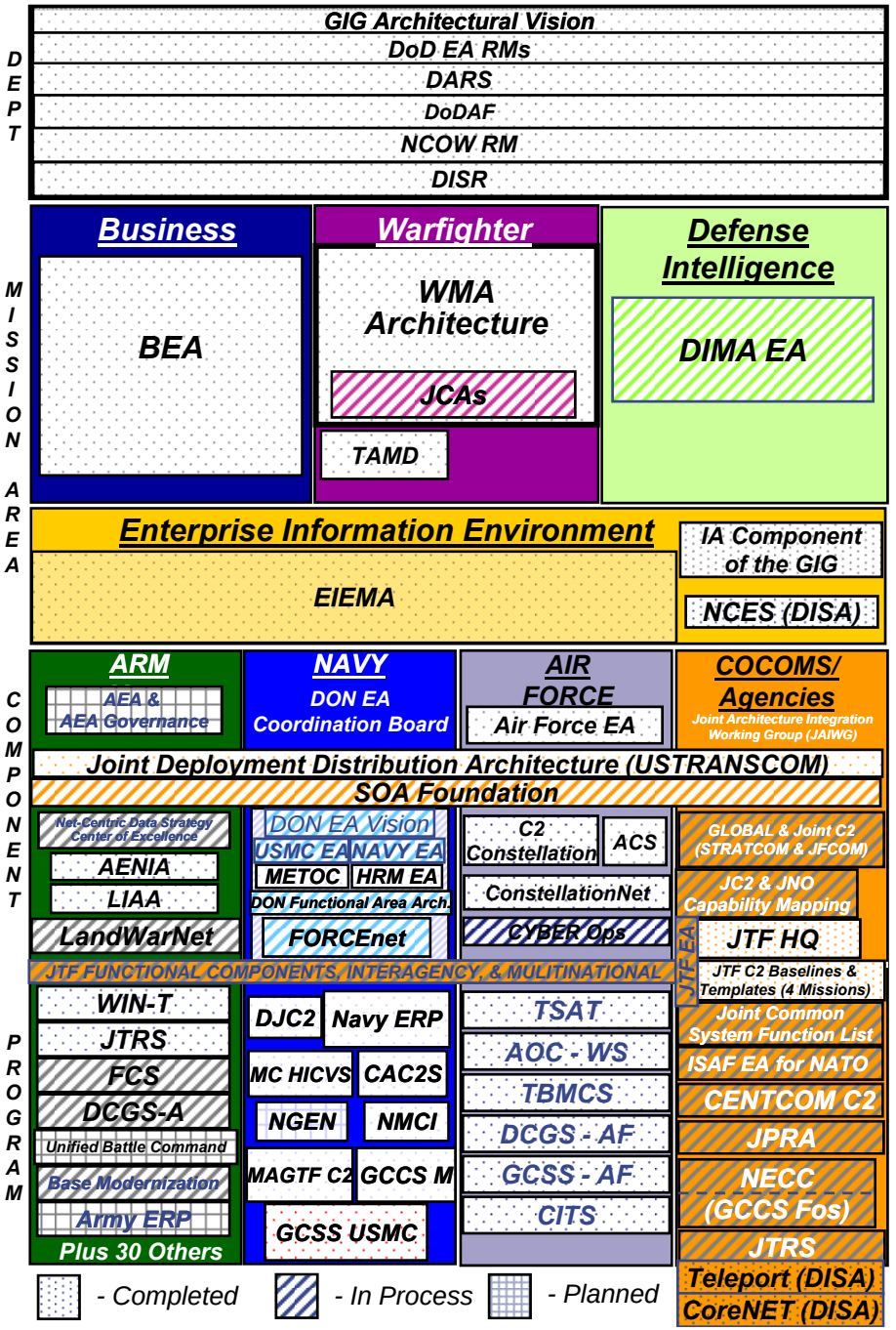
Alignment

- *Mission Threads*
- *Standards/Compliance*
- *Cross-Enterprise Perspective*
- *Content Comparison*

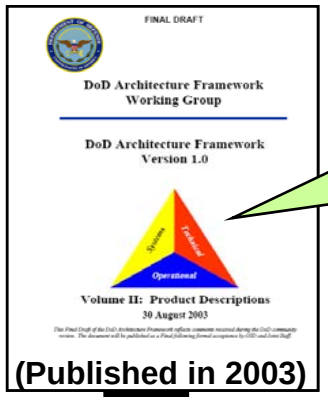
Tiered Accountability

- *Distributes responsibility*
- *Appropriate SME Involvement*
- *Improved Configuration Management*

DoD Enterprise Architecture

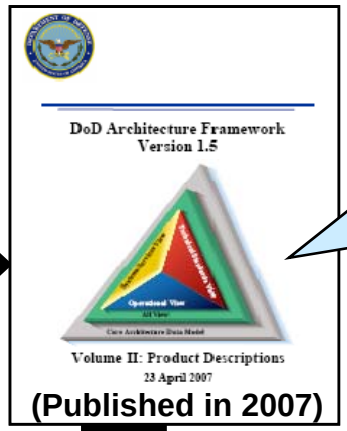


DoDAF Evolution To Support "Fit For Purpose" Architecture



(Published in 2003)

DoDAF 1.0
- CADM Separate
- Baseline For DoDAF 1.5
- Removed Essential & Supporting Designations
- Expanded audience to all of DoD



(Published in 2007)

DoDAF 1.5
- **Addresses Net-Centricity**
- Volume III is CADM & Architecture Data Strategy
- **Addresses Architecture Federation**
- Baseline for DoDAF 2.0
- **Shifted away from DoDAF mandating a set of products**

DoDAF

2.0

(NOV 2008)

DoDAF 2.0
- **Cover Enterprise and Program Architecture**
- **Emphasize Data versus Products**
- **Tailored Presentation**
- **AV-1 to capture federation metadata**
- **Quality Support to Decision Processes**
- **FEA & Allied/Coalition Support**
- **Journal**
  - Errata & Interim Releases

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Our Workforce is Our Future