

Utility Agility -- An Oxymoron?

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Piloting the business ship



In unpredictable waters



©Kurt Jones 2003

Agility is a Simple Concept

- What it is....What it isn't
- Forces advancing/impeding progress
- Where to find it now....Where it's going
- How to recognize and measure it
- Agile policy/practice/process/system
- How utility-sector motivation differs
- And finally....Where the oxymoron really is!

What it isn't

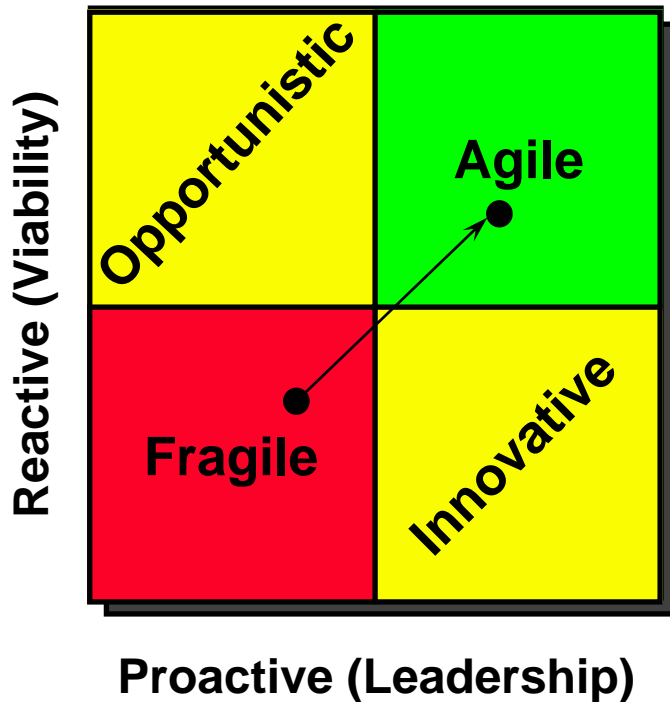
- Outsourcing
 - Alternative energy sources and hedges
 - Technology of any kind...especially IT
 - Diversified reg/dereg business models
 - etc.....
- 1) A business practice, no matter how agile, does not make an enterprise agile
 - 2) A practice not designed to support agility won't, no matter what it's called

What it is

- An operating strategy
- An embedded culture
- A business-engineering discipline
- A business-systems architecture
- A broad competency across the enterprise
- **Agility is Risk Management:**
decreasing vulnerability and risk by
increasing options and predictability

Why?

- Agility is about surviving and thriving in an unpredictable and uncertain environment



The ability to respond effectively at *all* times, reactively *and* proactively

Why now?

**Knowledge
builds on
knowledge**

**The more
you have
the more
you get**

**The knee
of the curve
is passed**

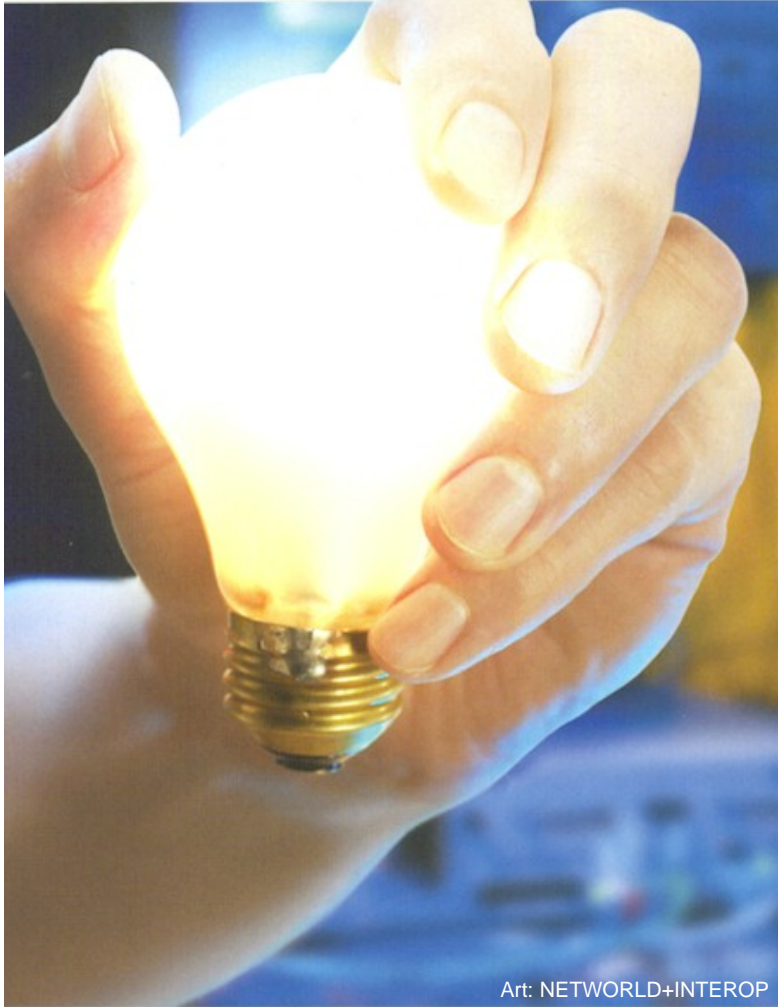
- Nuclear physics
- Personal computer
- Genetic engineering
- Semiconductors in everything
- Space travel
- Internet
- Globalization
- Cloning
- Nano-technology
- Hydrogen economy?
- Cold fusion?
- Anti-gravity?

**Decisions
must be made
faster...**

**...and
implemented
immediately**

**Knowledge
Explosion**

Proactive callings...at the moment

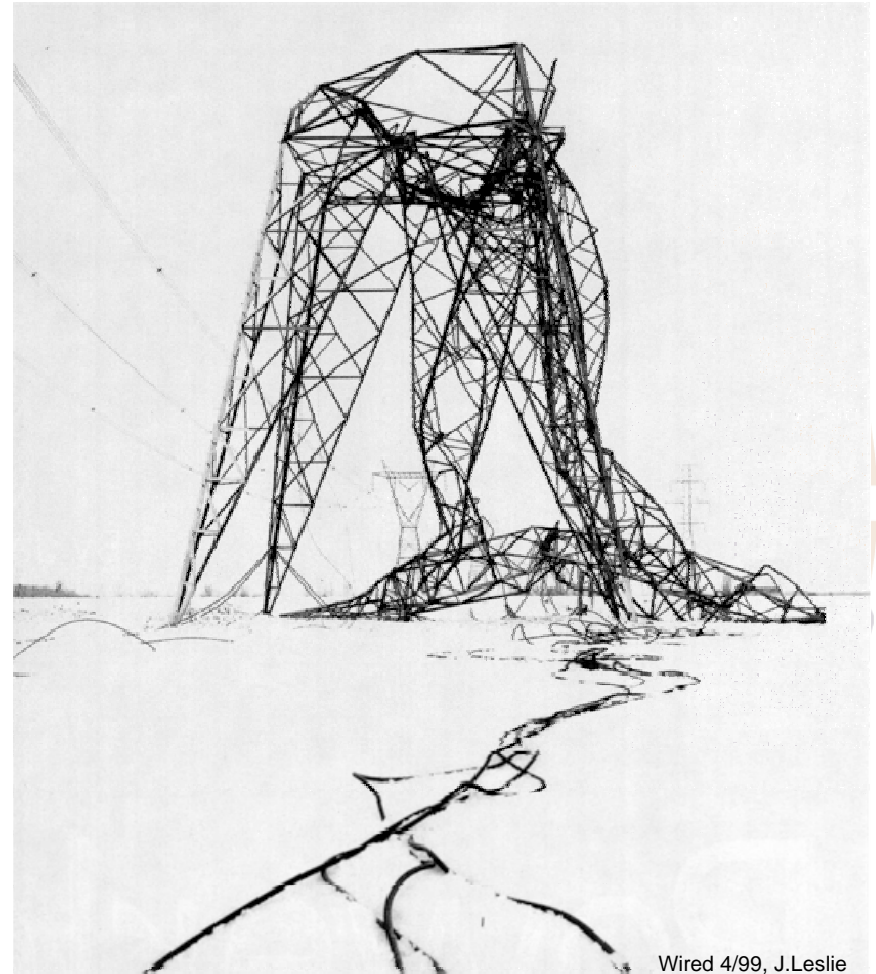


Art: NETWORLD+INTEROP

Hedge Funds, AMR,
Demand Response,
Distributed Generation,
Outsourcing, Wireless,
Info Integration, SOA,
Business Proc. Mgmt,
BPL, SCADA TCP/IP,
Fuel Cell, Wind, Nukes,
M&A, dereg/rereg,

Reactive demands...at the moment

Serious security,
active impatient PUC,
expectant customer,
governance upgrade,
SOX, environmental,
IT mess, reliability,
cost reduction,
aged workforce,
SCADA TCP/IP,
dereg/rereg ...



Wired 4/99, J.Leslie

Sailing in uncharted waters



The World Is Flat, Thomas L. Friedman,
First edition cover art
2005, Farrar, Straus and Giroux

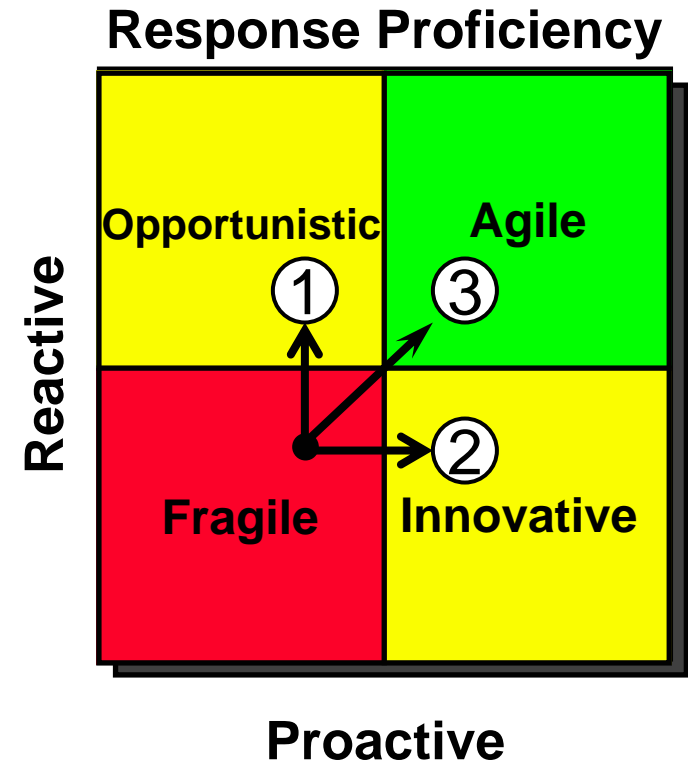
- We don't control the pace of new knowledge
- Unpredictable, Uncertain, Continuous...
 - New rules
 - New decisions
 - New values
 - New strategies
 - New priorities
 - New projects

So why care?

- *You're* the only game in town
- Approvals take a long time to get
- Regulation doesn't reward innovation
- Who is "*you*" when you think this way?
The industry, the company, or yourself?
- Who is at risk?
The industry, the company, or yourself?

You do have some choices

1. Learn how to react very well (or get run over)
2. Set the agenda and pace that others must react to (but don't stumble)
3. Develop effective response competency and regain control



Cats are the icon of agility

We agree that cats are agile. Why?

Aware, Nimble, Focused on value.

But on a hot tin roof they're spastic. Why?

- Info overload.
- Lost awareness.
- Inability to create options.

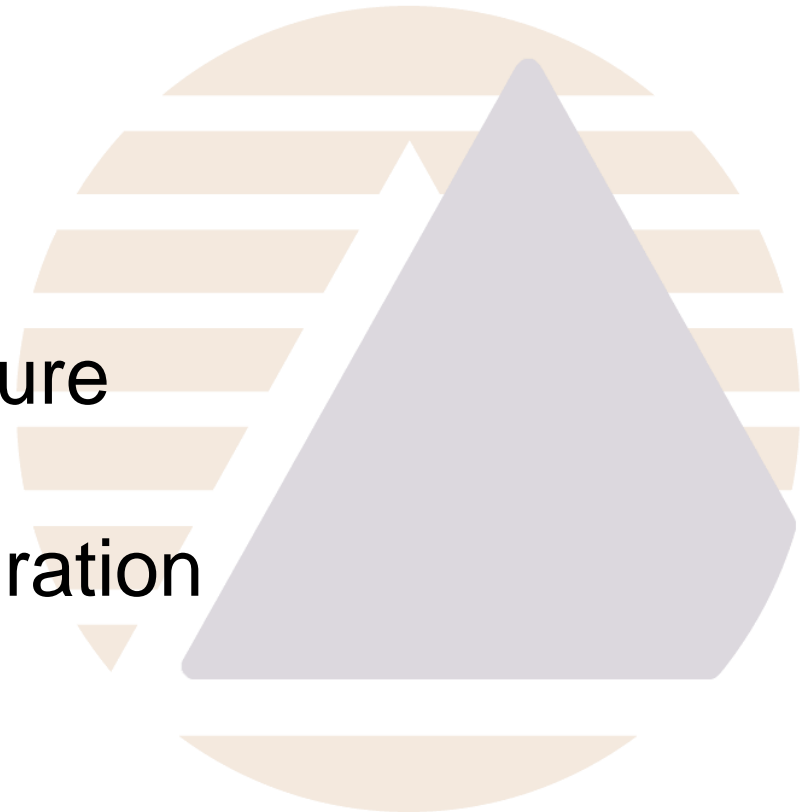
Up a tree they're catatonic. Why?

- Paralyzed with fear.
- Lost awareness.
- Inability to create options.



Forces impeding progress

- Regulation
- Entrenched culture
- Below-par IT infrastructure
- Perceived risk of IT migration



Forces advancing progress

- The pace of demands and expectations: governance, environmental, reliability, cost, satisfaction...
- The pace of compelling technologies: AMR, DG, Fuel cells, Wind, Nukes, Wireless...
- The pace of compelling services: BPL, DR, time-of-day pricing, efficient appliances...
- IT industry is enabling/promoting agility: EAI, EII, SOA, BAM, BI, web services, virtualization...
- Pathfinders are at work: PNM, Xcel, NSTAR ...
- Executive churn sorts for agile management naturally
- Security will not be effective until it is agile

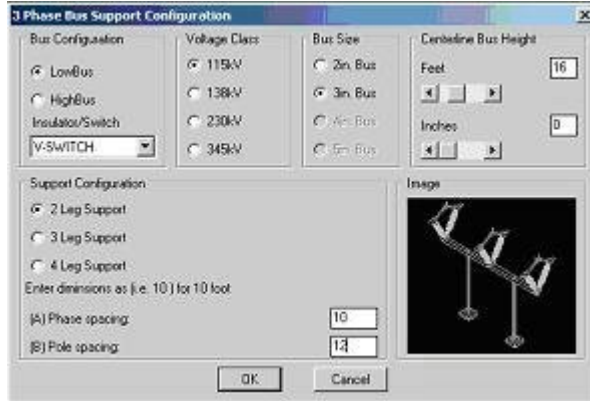
Where to find it now (**sometimes**)

- On Demand JIT load response!
- Disaster recovery
- Energy sourcing risk management
- Business process outsourcing
- Collaboration (Xcel)
- Outage response (NSTAR)
- Substation Design (PNM)

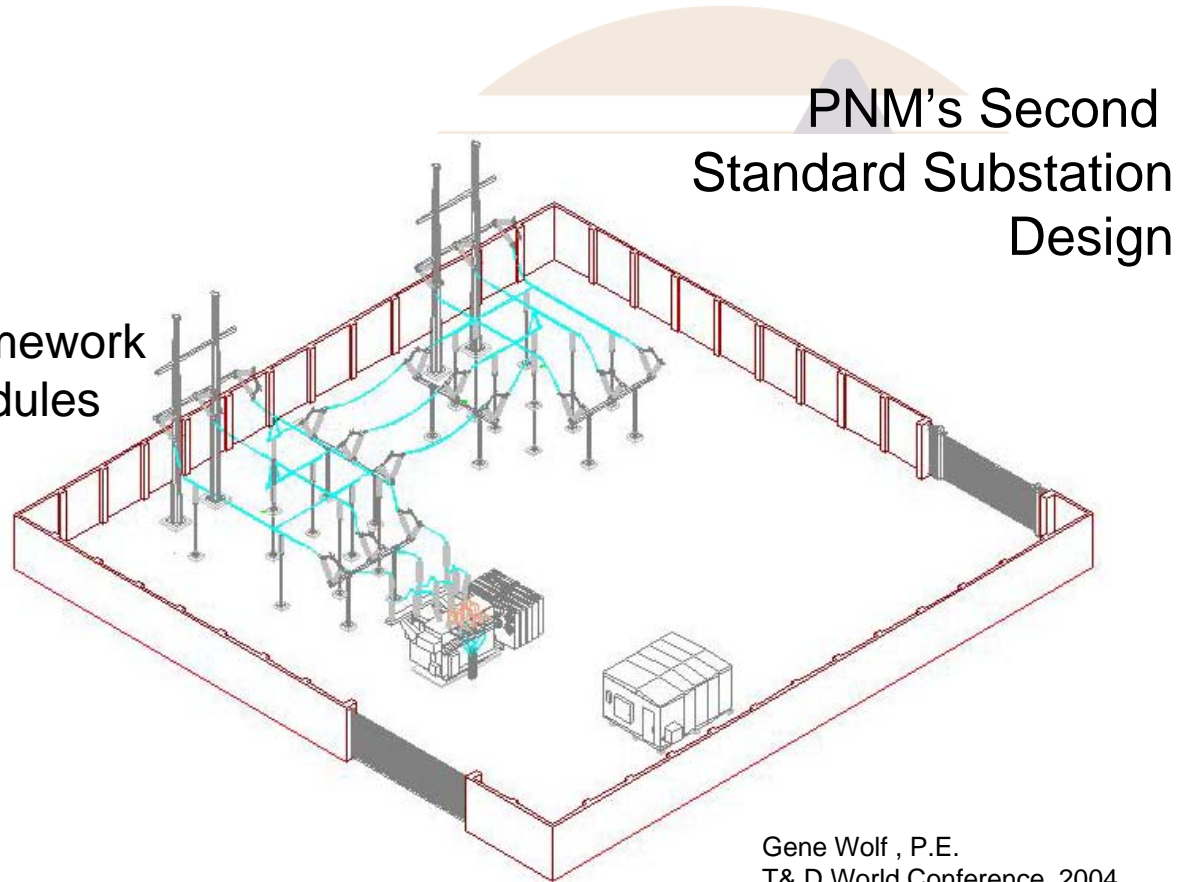
Agile system: Substation designs in 6 hours

3D-DASL Station Drawing
H Type Station

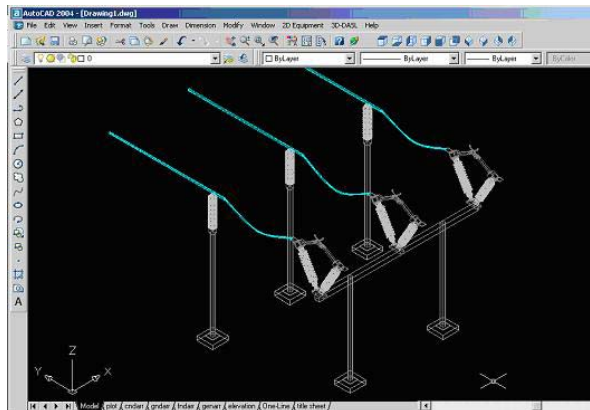
Details: www.utilipoint.com/issuealert/article.asp?id=2407



DASL provides common framework
and common equipment modules



PNM's Second
Standard Substation
Design



Gene Wolf , P.E.
T & D World Conference, 2004

58 Days from Signing of Contract to Energization of El Cerro Substation



1- Proposed Site

Gene Wolf , P.E., PNM
T& D World Conference, 2004



2- Superimposed Computer Graphic



3- Completed Project

How to recognize and measure it: Agile-systems research

Problem:

- Technology and markets changing faster than ability to employ and accommodate
- Requirements are uncertain and unpredictable
- Flexible approaches are inadequate
- Systems life is too short

Objective:

- Discover design principles for agility

Agile-systems research

Solution Search:

- Examined 100s of systems of various types (products, processes, procedures, peopled)
- Looked for systems that responded *effectively*
- Looked for metrics that defined *effectively*
- Looked for categories of response types
- Looked for principles that enabled response

Agile-systems research

Methodology:

- *Realsearch* = real people, real problems, real-time
- 3-day knowledge-development workshops
- 7 teams of 15-30 "responsible" people
- Analyzing 2-4 systems per host site
- Framework driven analysis:
metrics(4), response types (2x4), principles (10)

What analysis found (requirements)

Proactive response in 4 categories:

Creation - Improvement - Migration - Modification

Reactive response in 4 categories:

Correction - Variation - Expansion - Reconfiguration

Response effectiveness with 4 metrics:

Time - Cost - Quality - Scope

What analysis found (design)

One general strategy:

Reusable modules Reconfigurable in a Scalable framework

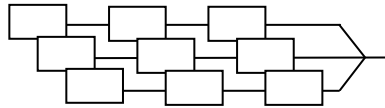
Ten general design principles:

1. Evolving **Framework** Standards
2. Encapsulated **Modules**
3. Facilitated Plug Compatibility
4. Facilitated Module Reuse
5. Module Redundancy/Diversity
6. Elastic Capacity
7. Distributed Control/Info
8. Facilitated Deferred Commitment
9. Flat Interaction
10. Self Organization

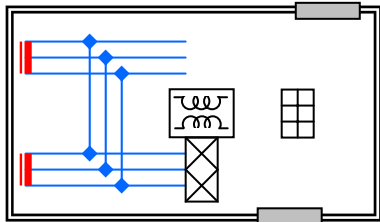
Basic Definitions



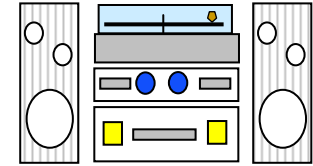
Company of Divisions



Portfolio of Energy Options



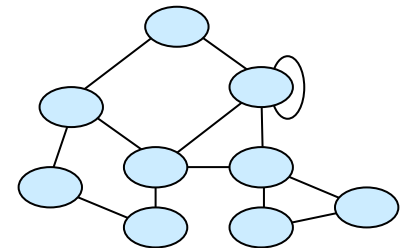
Substation of Equipment



Stereo System of Components

System

A group of modules sharing a common interaction framework and serving a common purpose.



Practice of Procedures

Framework

A set of standards constraining and enabling the interactions of compatible system modules.

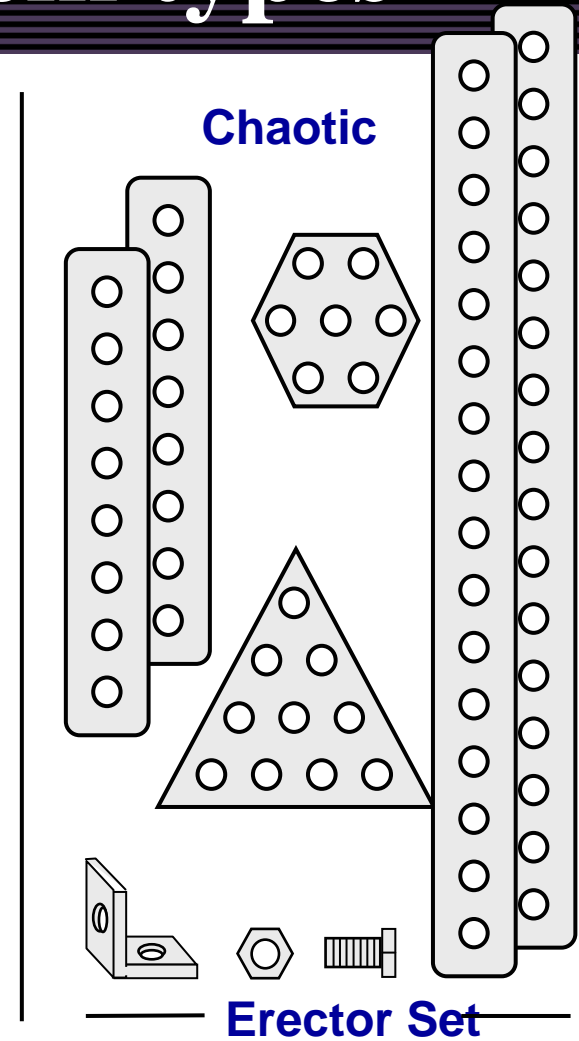
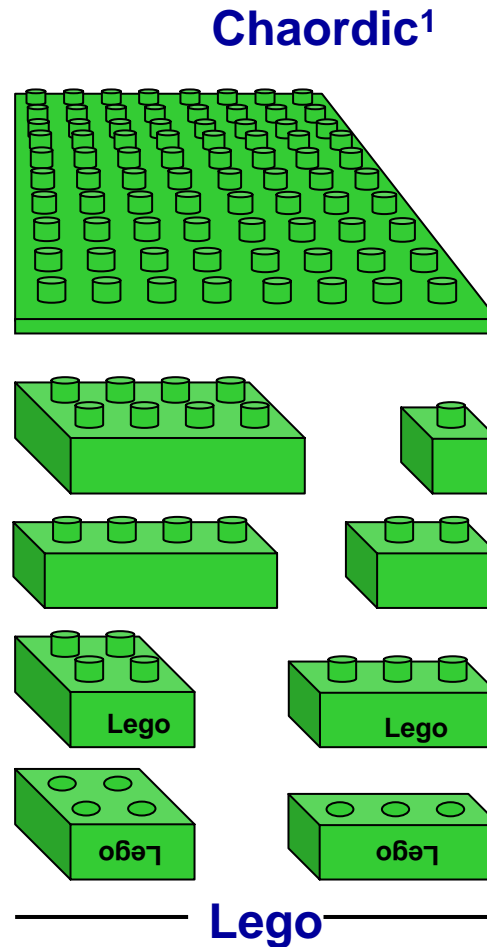
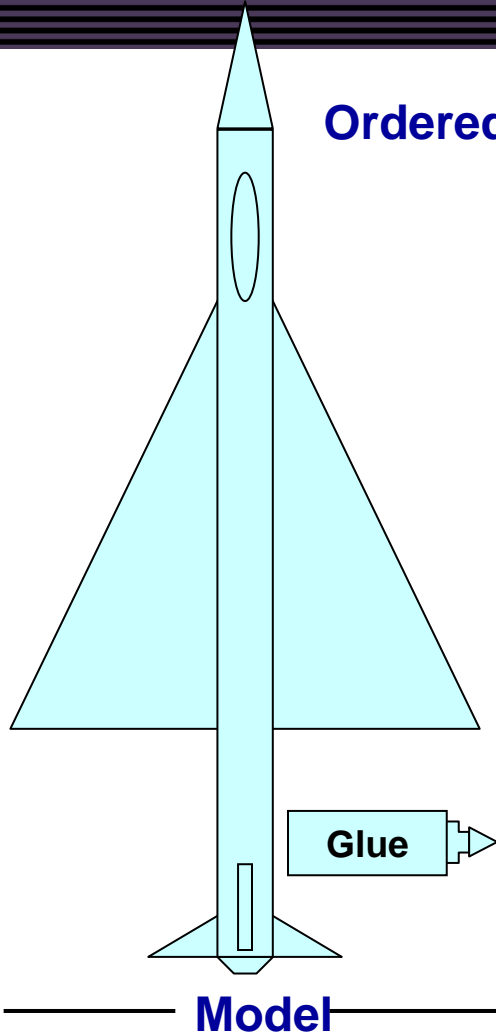


Team of People

Module

A separable system sub-unit with a self-contained capability/purpose/identity, and capable of interaction with other modules.

Frameworks: Three construction system types

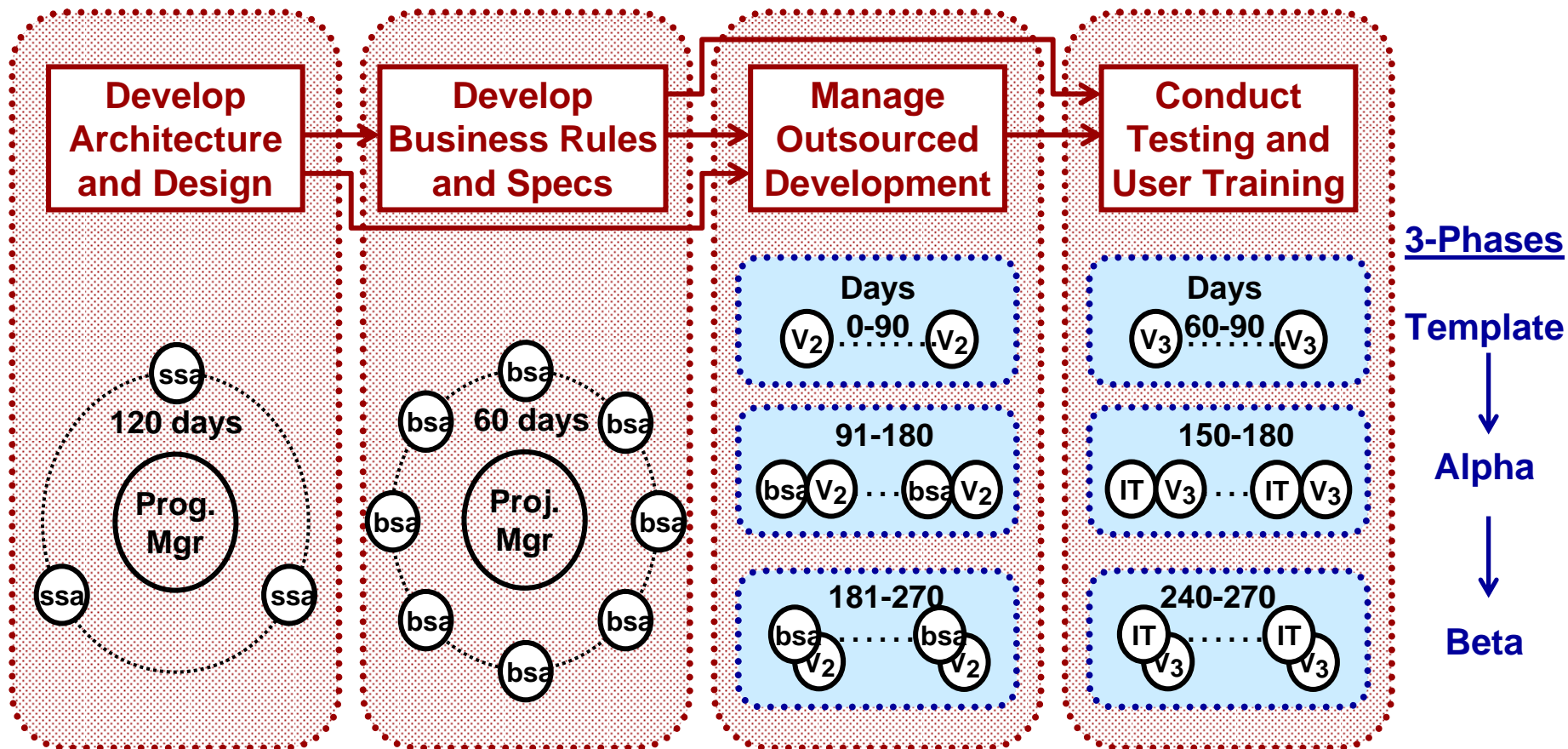


¹ Dee Hock (Visa Corp) coined the word *chaord* for organisms, organizations, and systems which harmoniously exhibit characteristics of both order and chaos.

\$1.5 billion company

ERP: \$9mil, 12 mos + HRM in 5 mos

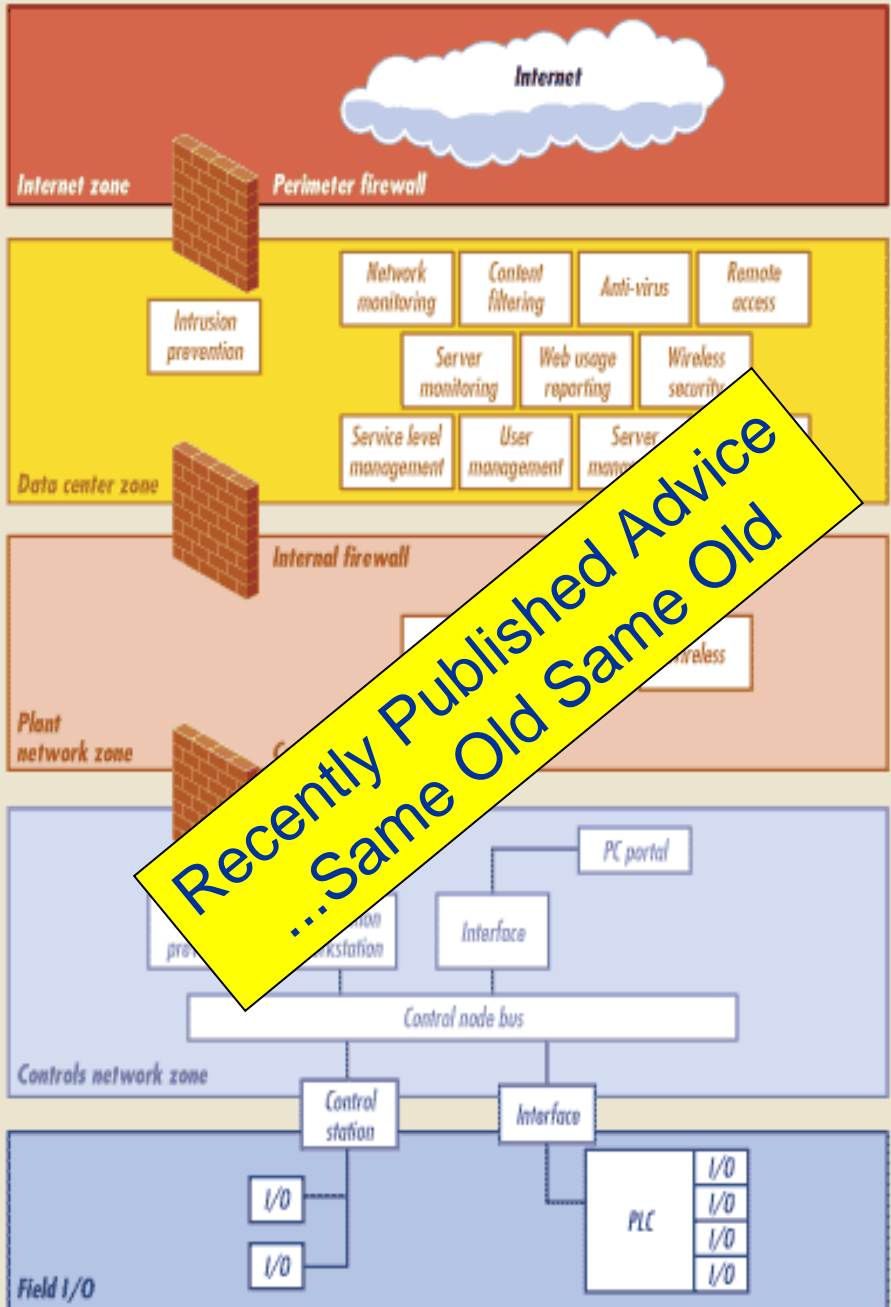
Under budget, on spec, on time = Predictable



Encapsulated ERP Implementation Process
- Designed to Accommodate Requirement Evolution -

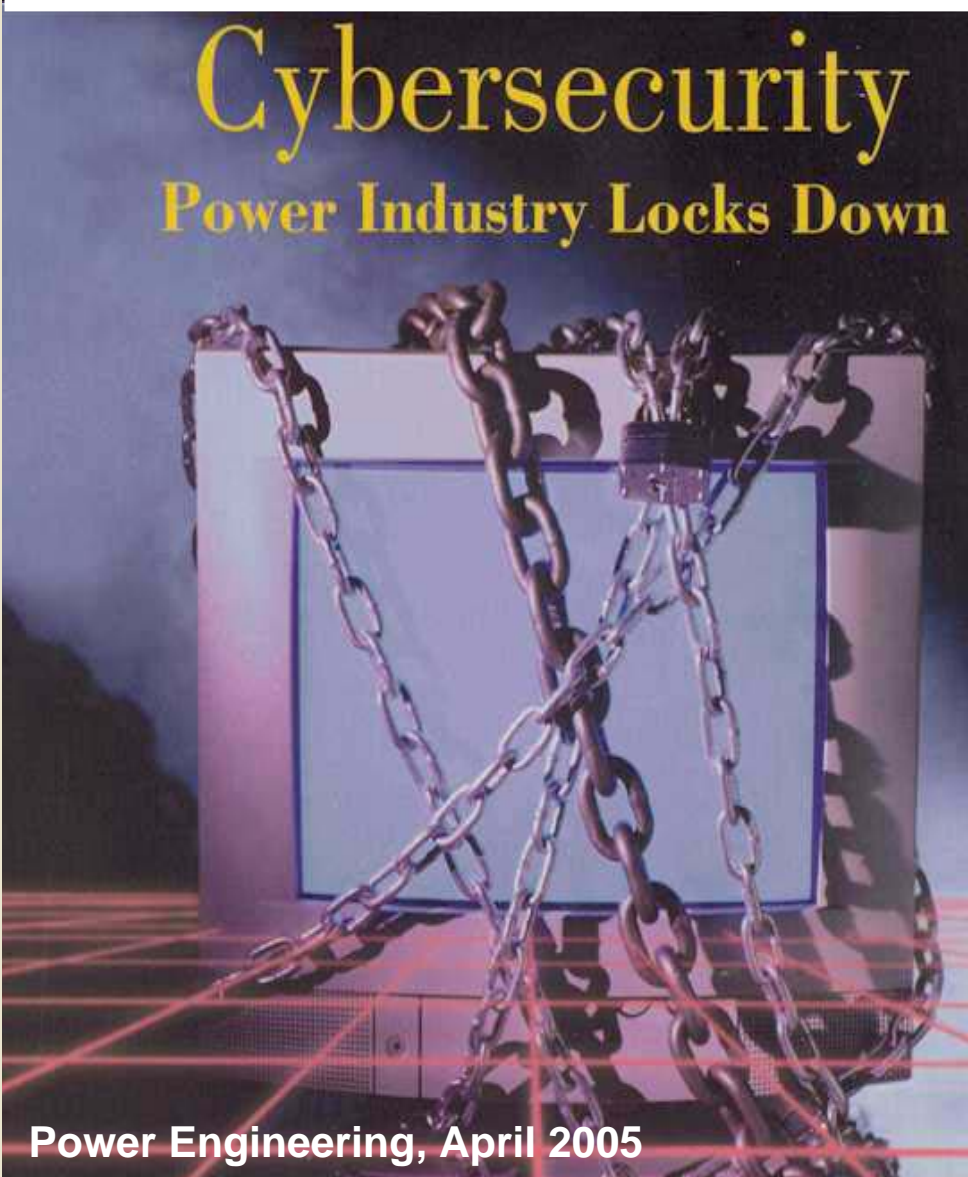
Agile projects are predictable

- Consider all agile principles: better design-for-agility
- Values: increases scope of response options, reduces future cost and time
- Define clear **framework**: integration rules don't change
- Values: increases predictability of project, reduces current cost and time
- Encapsulate work **modules**: requirements don't change
- Values: increased predictability of project, increased options for alternatives, reduces current cost and time



Recently Published Advice
 ...Same Old Same Old

New Need: Agile policy procedure, practice



Cybersecurity Power Industry Locks Down

Three years ago... Today is worse

300 Companies Studied:

- 79% avg increase in attacks per company (not virus/worms)
- 43% of companies had at least one potentially **crippling attack**
- 39% of attacks were **targeted** at specific entities

Most-targeted industries were:

- high tech (961 attacks)
- **power and energy (725)**
- financial services (895)
- media/entertainment (706)

Biggest losses from insiders:

- \$2.7 million average insider attack cost
- \$57,000 average outsider attack cost

"Internet Threat Serious and Growing," E. DeJesus, *Security Wire Digest*, 31 Jan 2002, www.infosecuritymag.com

Seven ignored reality factors

1. **Human Behavior** – Human error, whimsy, expediency, arrogance...
2. **Organizational Behavior** – Survival rules rule, nobody's in control...
3. **Technology Pace** – Accelerating vulnerability-introductions...
4. **System Complexity** – Incomprehensible, unintended consequences..
5. **Globalization** – Different partner ethics, values, infrastructures...
6. **Agile Enterprise** – Outsourcing, webservices, transparency...
7. **Agile Attackers** – Distributed, collaborative, self organizing...

**For 50 years of IT-progress,
management policy/procedure/practice
has followed behind ... patching potholes.**

Strategy requires understanding

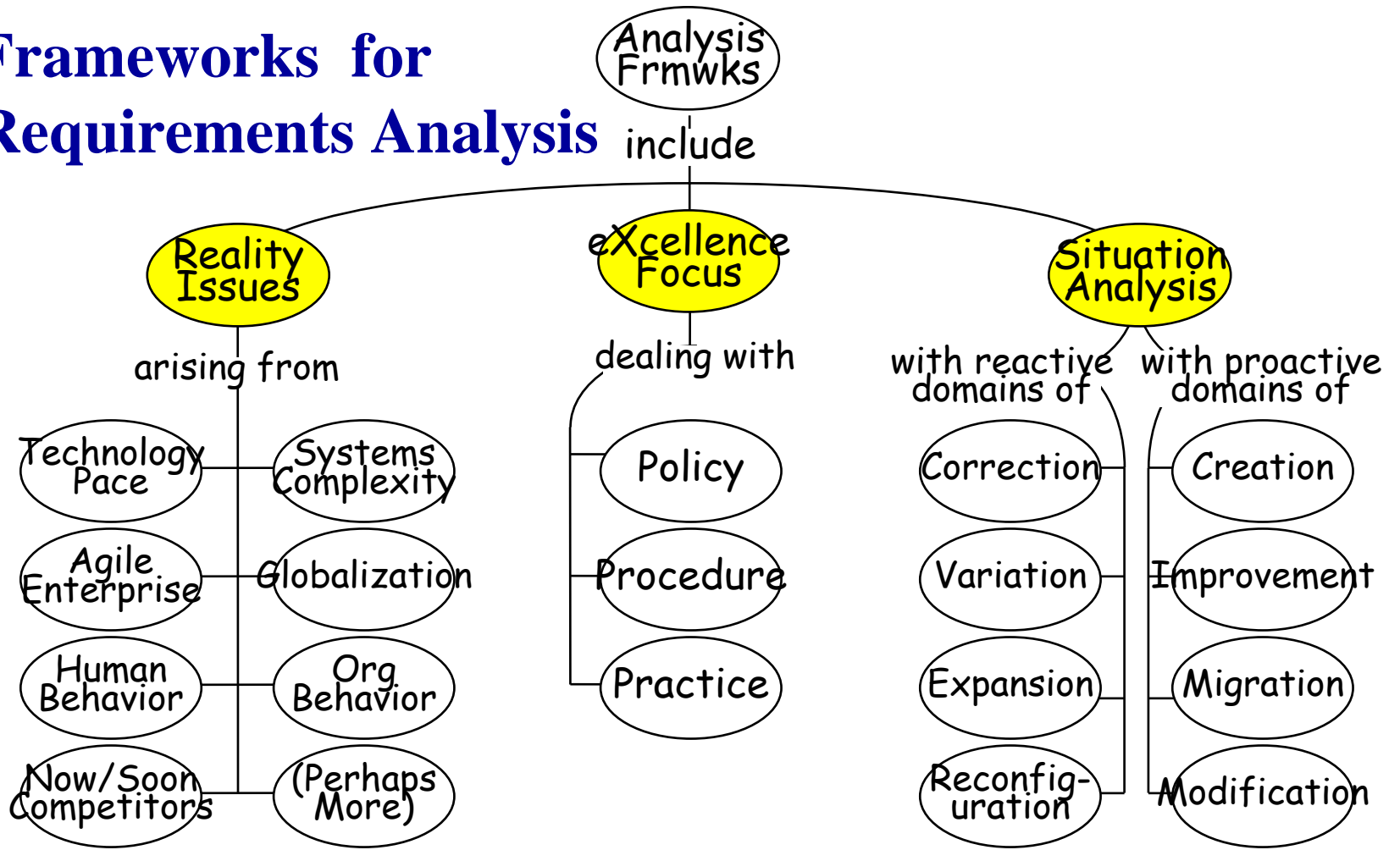
A rational view of the problem:

- ▲ Reality bites – what is its nature?
- ▲ The problem is bigger than technology – what is its nature?
- ▲ The situation is in constant flux – what is its nature?

A rational view of the solution:

- ▲ You are compromised – now what?
- ▲ Situation in constant flux – what is proactive response-ability?
- ▲ eXcellence – what is its nature?

Frameworks for Requirements Analysis

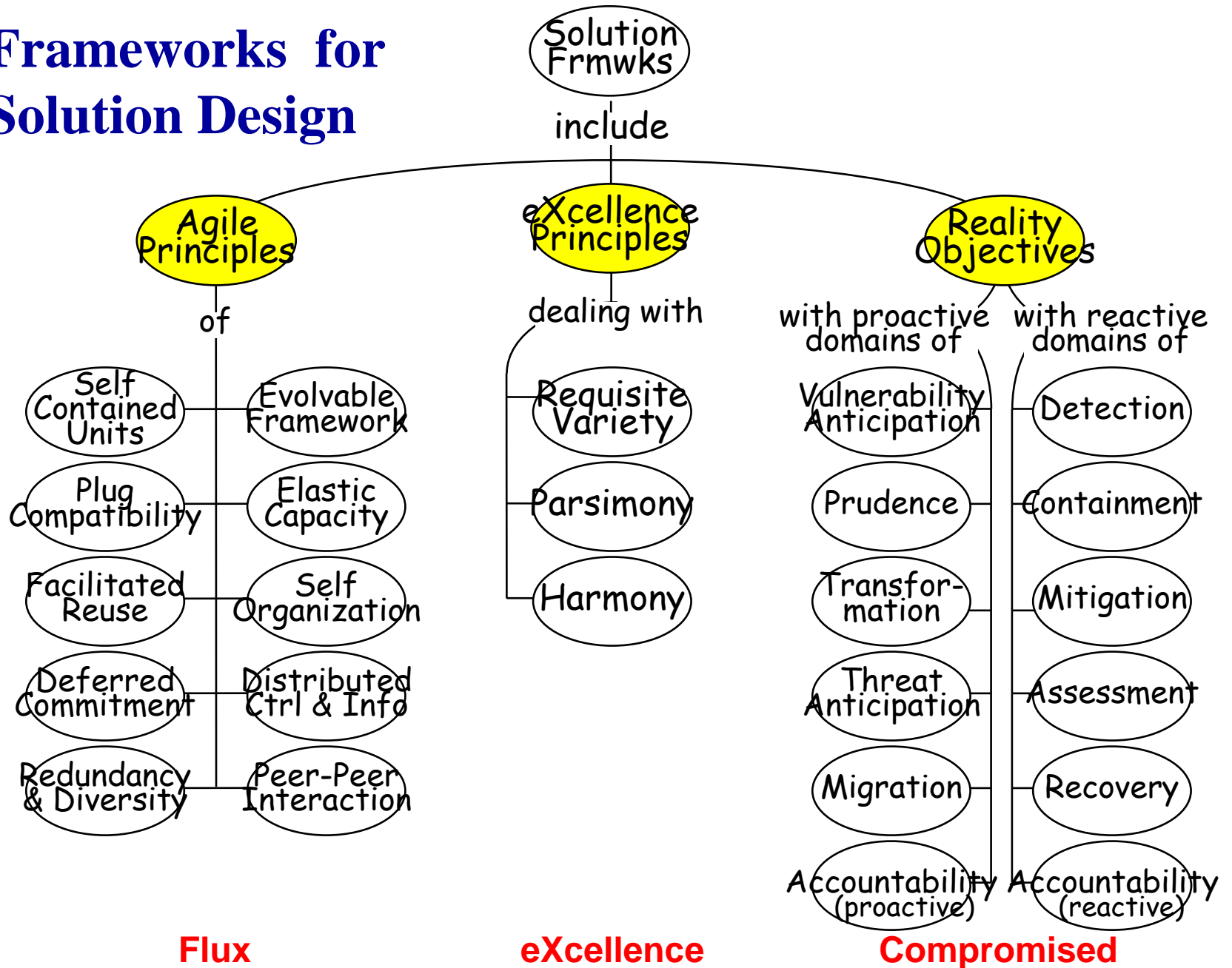


The Bite

Technology+++

Flux

Frameworks for Solution Design



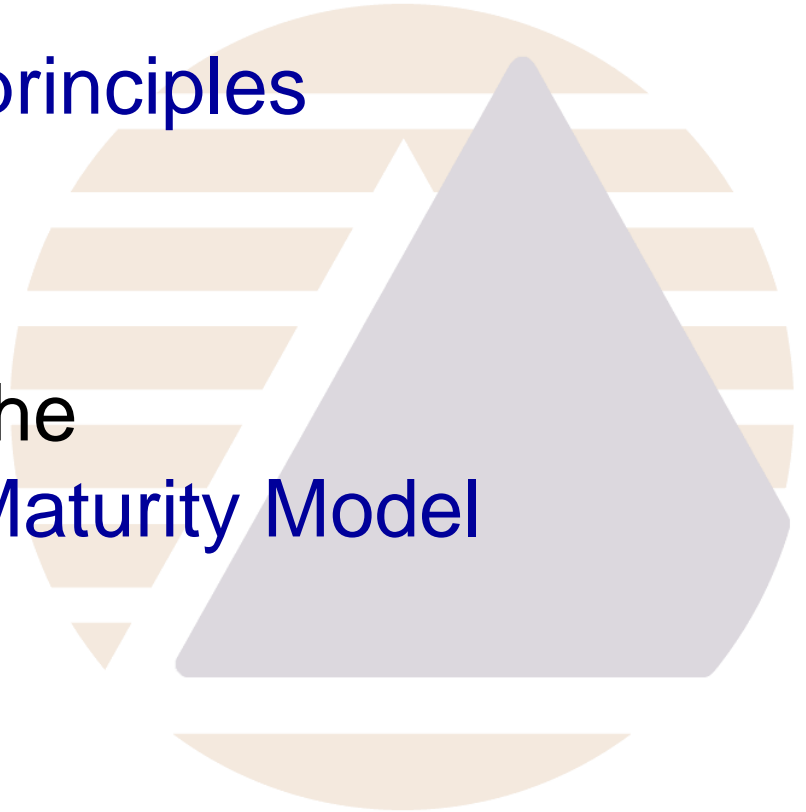
Where it's going

- IT infrastructure
 - Business process management
 - Distributed generation
 - Enterprise Risk Management (ERM)
 - Cyber security
 - Grid
- and because it must -----
- Compliance policy
 - Regulatory interaction

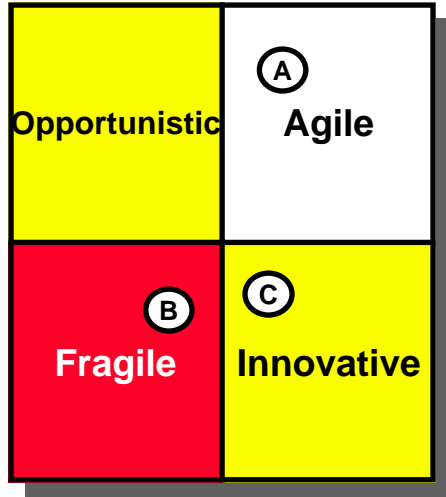


How to recognize it

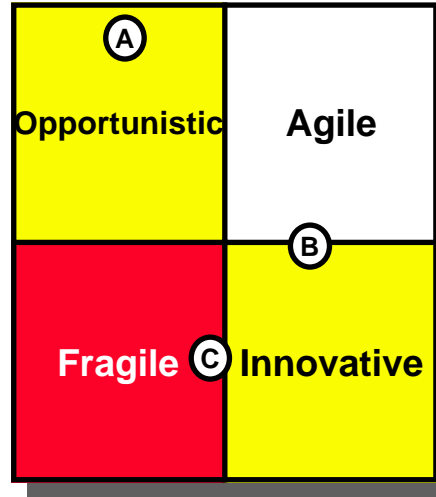
- At the systems level:
With application of the principles
- At the enterprise level:
With characteristics of the
Response Proficiency Maturity Model



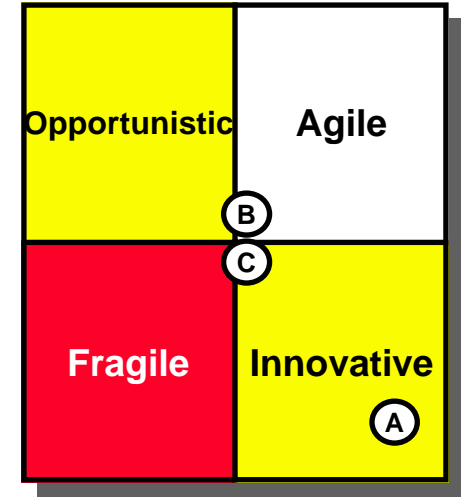
Outage Management



Customer Responsiveness

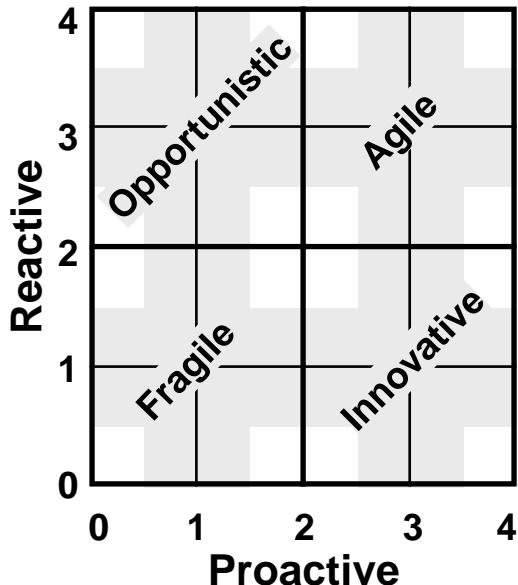


Competency Development



Comparing Companies A, B, C.

Assessment and Competitive Evaluation

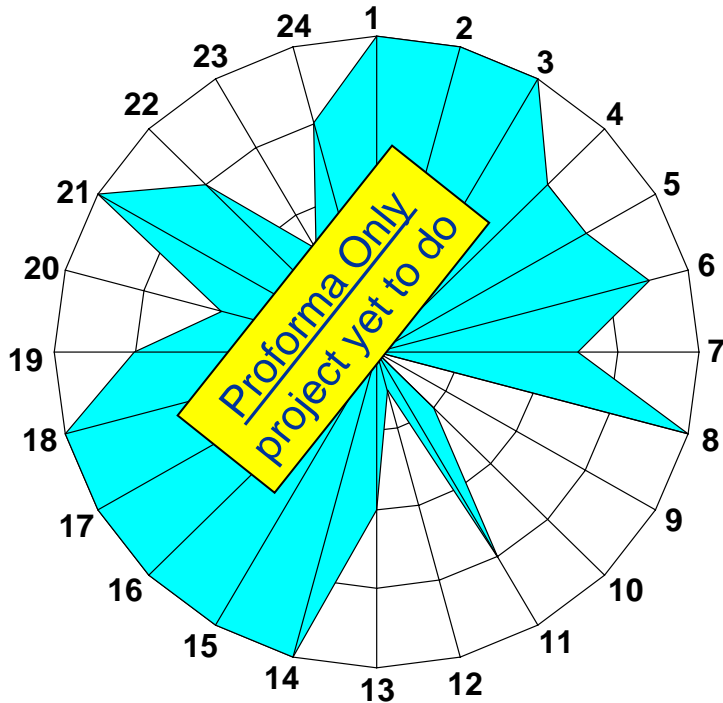


Response Proficiency Maturity Model

Stages	Metric Focus	Working Knowledge	Competitive Development	
			Proactive	Reactive
0 Accidental	Pass/Fail	Examples	Lucky	None
1 Repeatable	Time	Concepts	Creation	Correction
2 Defined	Cost	Metrics	Improvement	Variation
3 Managed	Quality	Rules	Migration	Expansion
4 Mastered	Scope	Principles	Modification	Reconfig'tion

Benchmarking response proficiency

...across the industry



maturity model metrics

www.utilipoint.com/issuealert/article.asp?id=2371



Critical Agile Business Practice???

- 4.0 1 Regulatory compliance
- 4.0 2 SOX compliance, controls
- 4.0 3 Governance
- 3.0 4 Management development
- 3.0 5 Creativity and innovation
- 3.5 6 Asset management
- 2.5 7 Outage management
- 4.0 8 Service reliability
- 0.0 9 Cyber security
- 1.0 10 Physical security
- 3.0 11 Customer care
- 0.5 12 Outsource management
- 2.0 13 Business process management
- 4.0 14 Regulatory relationship mgmnt
- 4.0 15 Business intelligence
- 4.0 16 Risk management, energy
- 4.0 17 Risk management, operations
- 4.0 18 Plant technology migration
- 3.0 19 Staffing and skill development
- 2.0 20 Cost management
- 4.0 21 Disaster management
- 3.0 22 Business process IT support
- 1.5 23 Information technology migration
- 3.0 24 Field operations

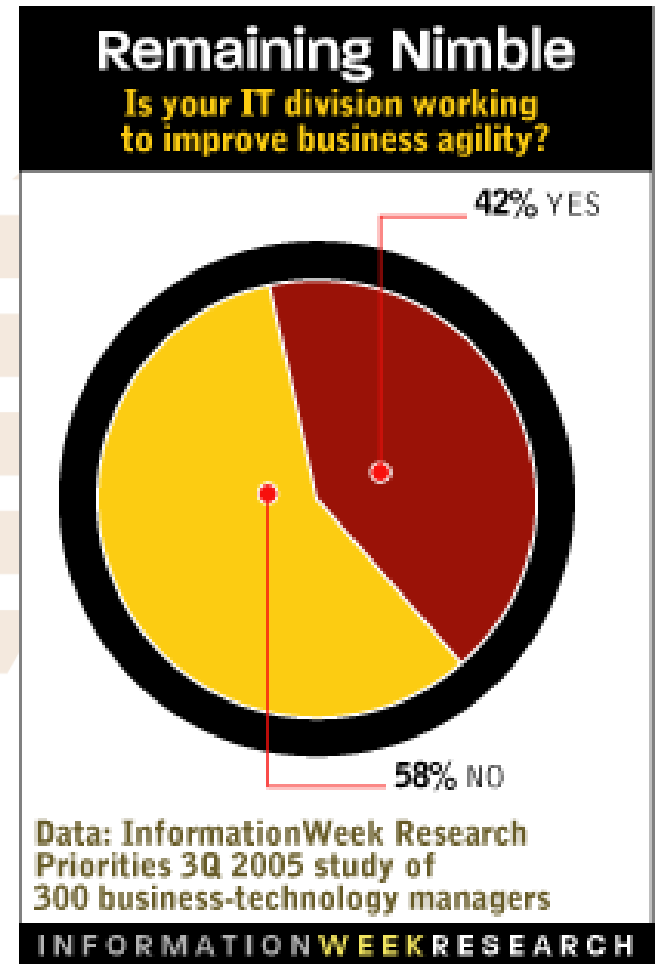
How Would Your Company Score?

June 2005 Survey – Across Sectors

"InformationWeek asked 300 business-technology managers about their business-technology initiatives."

"Two in five managers cite improving business agility as a key IT objective."

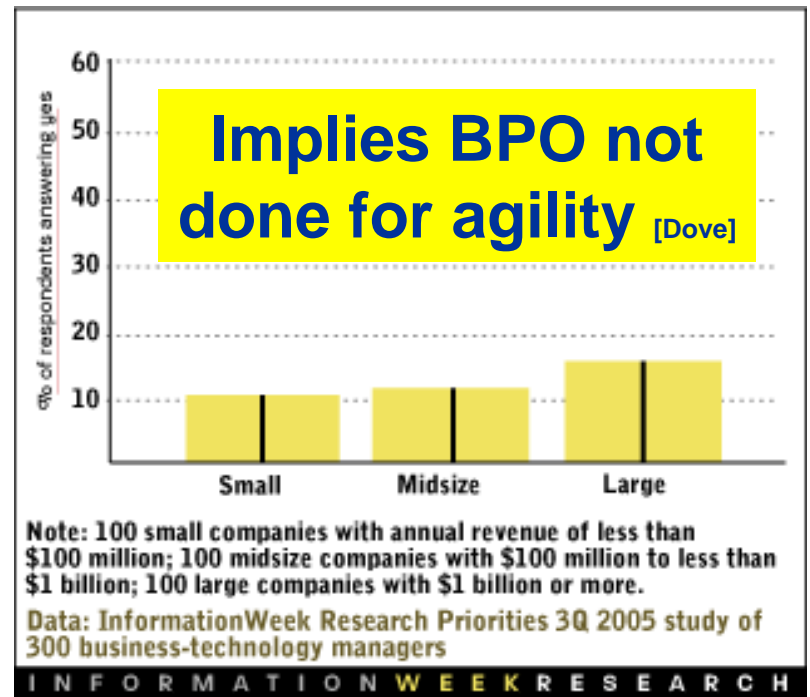
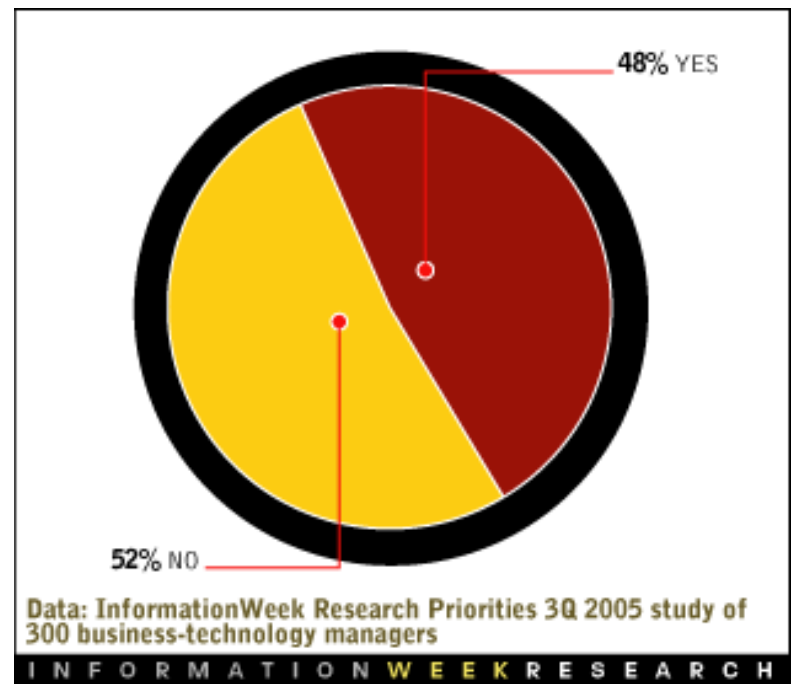
Reported in InformationWeek 7/25/05



"Is keeping up with the pace of change among your company's business priorities?"

"Is your IT division supporting business-process outsourcing?"

Reported in InformationWeek 7/25/05





BEEFED UP BOARDS

M EET YOUR FIRM'S NEW BOARD of directors. More independent of the company it serves. More accountable for the accuracy of financial statements. Better informed about how the company is run. And, maybe, less a pal to the company's chief executive officer and more representative of shareholder's interests.

August 1, 2005, Jill Jusko, Industry Week, pg 53

Utility sector motivation differs

- Manufacturing sector threatened with both industry extinction and company extinction
- For the utility sector:
 - No industry extinction risk
 - Little company extinction risk
 - But, management is at real personal risk
- Boards, commissions, and customers want *response able* best practices

What's on your horizon?

2003 - Edge of the Hurricane

A large cargo ship is seen from a high angle, sailing on the ocean. The ship's deck is visible, showing several large, reddish-brown rectangular sections. The ocean is dark blue with white wake behind the ship. In the distance, a massive, dark wall of clouds stretches across the horizon, resembling the edge of a hurricane. The sky is filled with heavy, grey clouds, with a bright patch of light breaking through on the right side, suggesting a sunset or sunrise.

Where the oxymoron really is!

Agile Regulation

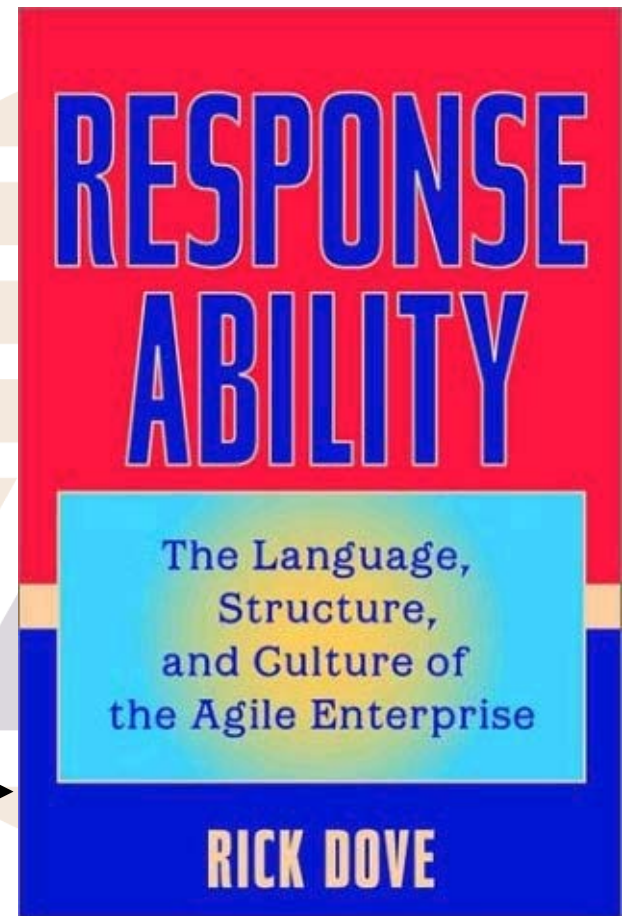
But then – no one's suggested the concept

...as yet

To conclude – my missions are...

- **Utility Industry Transformation**
- **Graceful Integration Migration**
- **Agile Security**
- **Utility Agility Benchmarking**
- **Agile Regulation Crafting**
- **Agile Regulation Interaction**

The rest of the story →
can be found at [Amazon.com](https://www.amazon.com)



Thank You

Enjoy The Conference!

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