

# AASHTO<sup>2012</sup> IS

MAY 14<sup>TH</sup> - 17<sup>TH</sup>

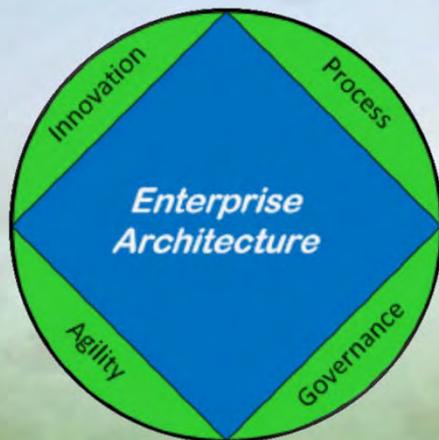


*Modernizing Transportation with Technology*



# Michigan's Journey

## *Enterprise Architecture – Controlled Innovation*



Scot Ellsworth

Chief Enterprise Architect

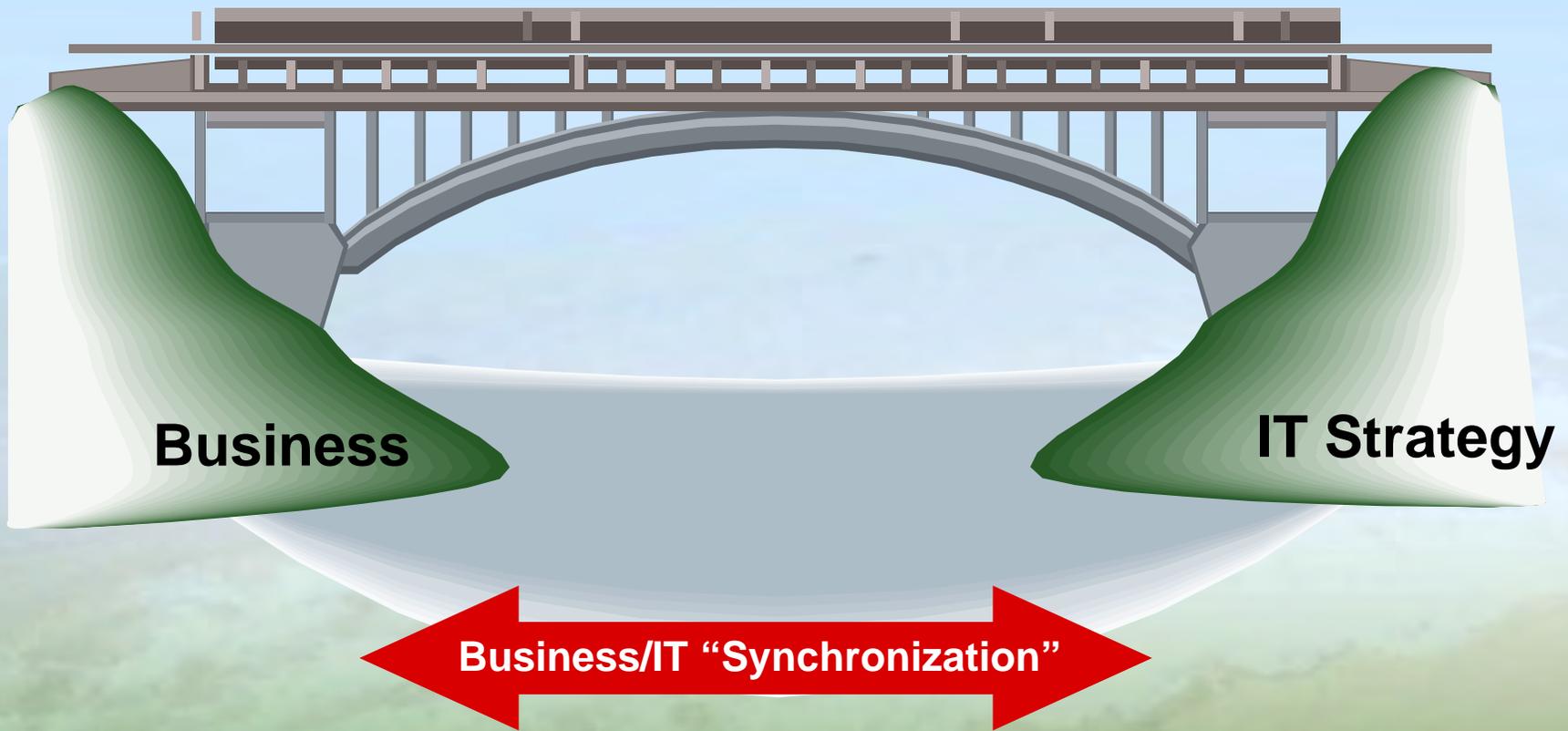
Director - Enterprise Architecture

State of Michigan - DTMB

# Enterprise Architecture

- Enterprise architecture is about creating the support, over time, that an enterprise needs to reach the ability to align business strategy, IT strategy, and individual programs and projects.
- An EA approach pulls all the elements of this support together, providing what an enterprise needs to manage IT as a business.
- We consider the discipline of aligning business strategy, IT strategy, and individual programs and projects to be what IT management is all about.

EA provides the bridge between business drivers and technology capabilities.



# EA in a Nutshell

## *The BIG picture*

- EA governs the phases of technology solutions
  - Acquisition
  - Development
  - Deployment
- Guides the creative process that determines implementation decisions
- Enables agile change



# Michigan's Early Attempts

***Incremental EA attempts made some headway but ultimately fell short***

- 2001 and 2003: outside consultants tapped
- Strategic Plan published
- Key models developed
  - Centralized Network Telecom (LMAN)
  - Data Center Consolidation
  - Desktop standardization (M/1 Adopt)



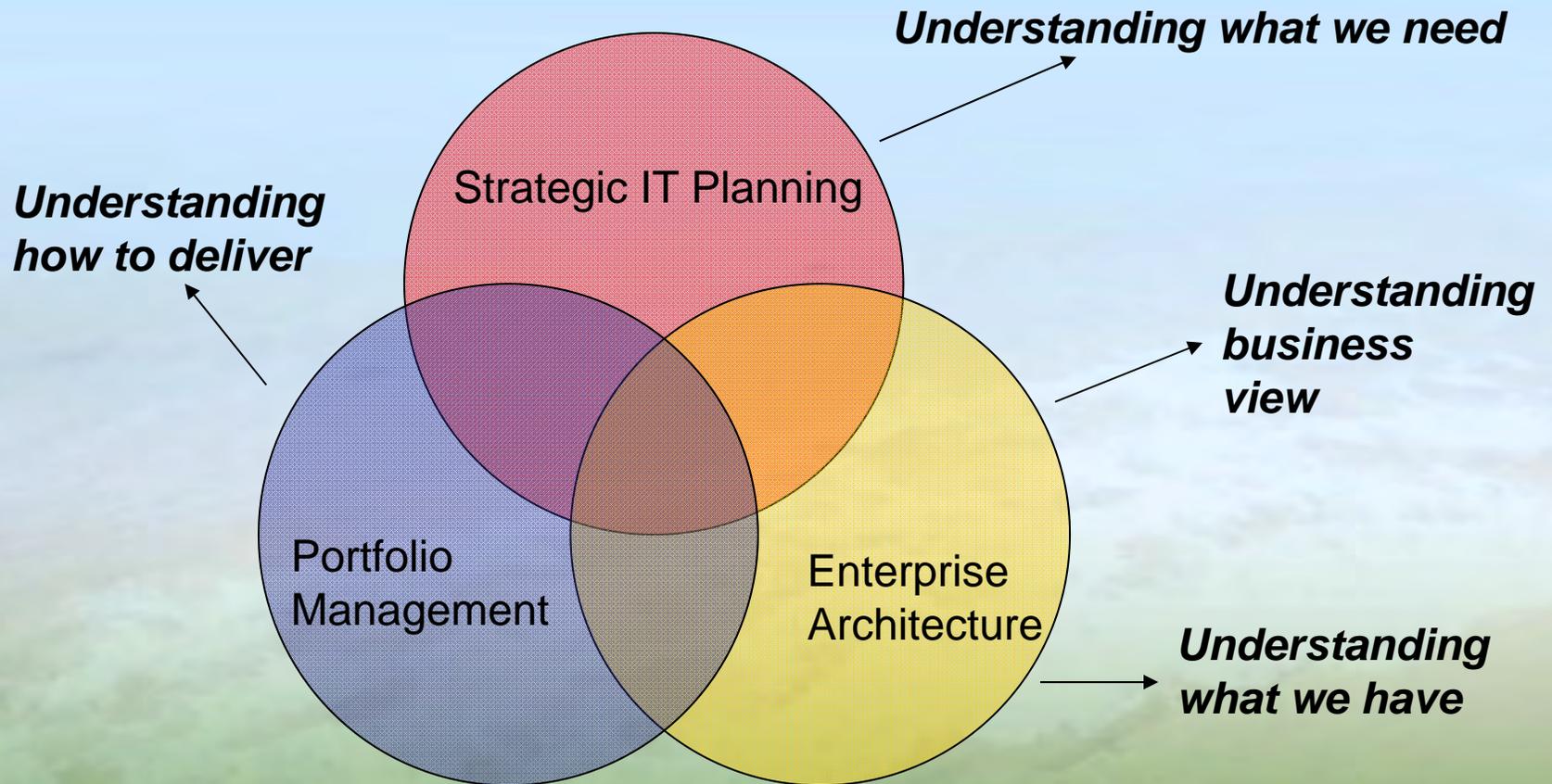
***Each attempt lacked momentum. Why?***

# The Business Factor

Approach	Impact
Decisions were made on a case-by-case basis	Islands of technology across the state required specialized and isolated staff for maintenance and support
Cross-agency opportunities not included in selection criteria	Integration of information and data were not valued and sharing was cumbersome and costly
Long-term sustainability was not a high priority	The focus was on purchase costs instead of budgeting for ongoing maintenance and support costs
Total Cost of Ownership on alternatives not compared	Real costs often underestimated and incomplete

***Today, it's a whole new story***

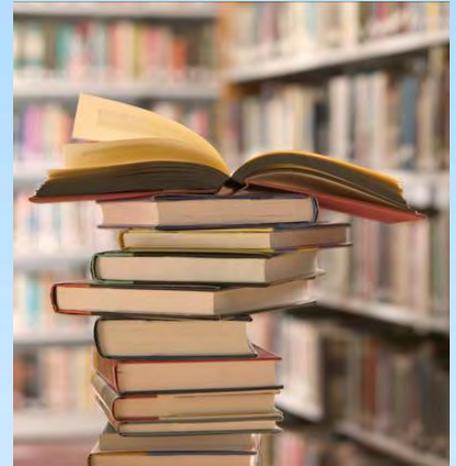
# EA is All About Relationships



# EA is a Resource...

## *...and an enterprise approach*

- Helps agencies tap technology and contracts used elsewhere in state government
- Supports pursuit of technology-enabled business solutions
- Guides long-term technology planning
- Assists in budget development
- Mitigates risk to critical business functions
- Standardizes technologies
  - Applications, tools and programs are better supported and more efficiently sustained



# What does this mean?

***It means we will not continue buying “everything and anything,” but we will...***

- Develop once and share (i.e., single sign-on capability)
- Reduce implementation time
- Remove outdated systems; replace them with business standards
- Review technology standards and direction every six months



Expect some calls from lobbyists and vendors!

# EA Mission

- Maximize the state's return on IT investments.
- Provide sound advice based on objective facts and measureable outcomes.
- Improve reliability, predictability, and consistency of IT solutions.
- Reduce costs to implement and operate IT systems.
- Review and consult on designs and assessments.
- Encourage a technology model that leverages solutions for multi agency use.

## EA Mission (cont.)

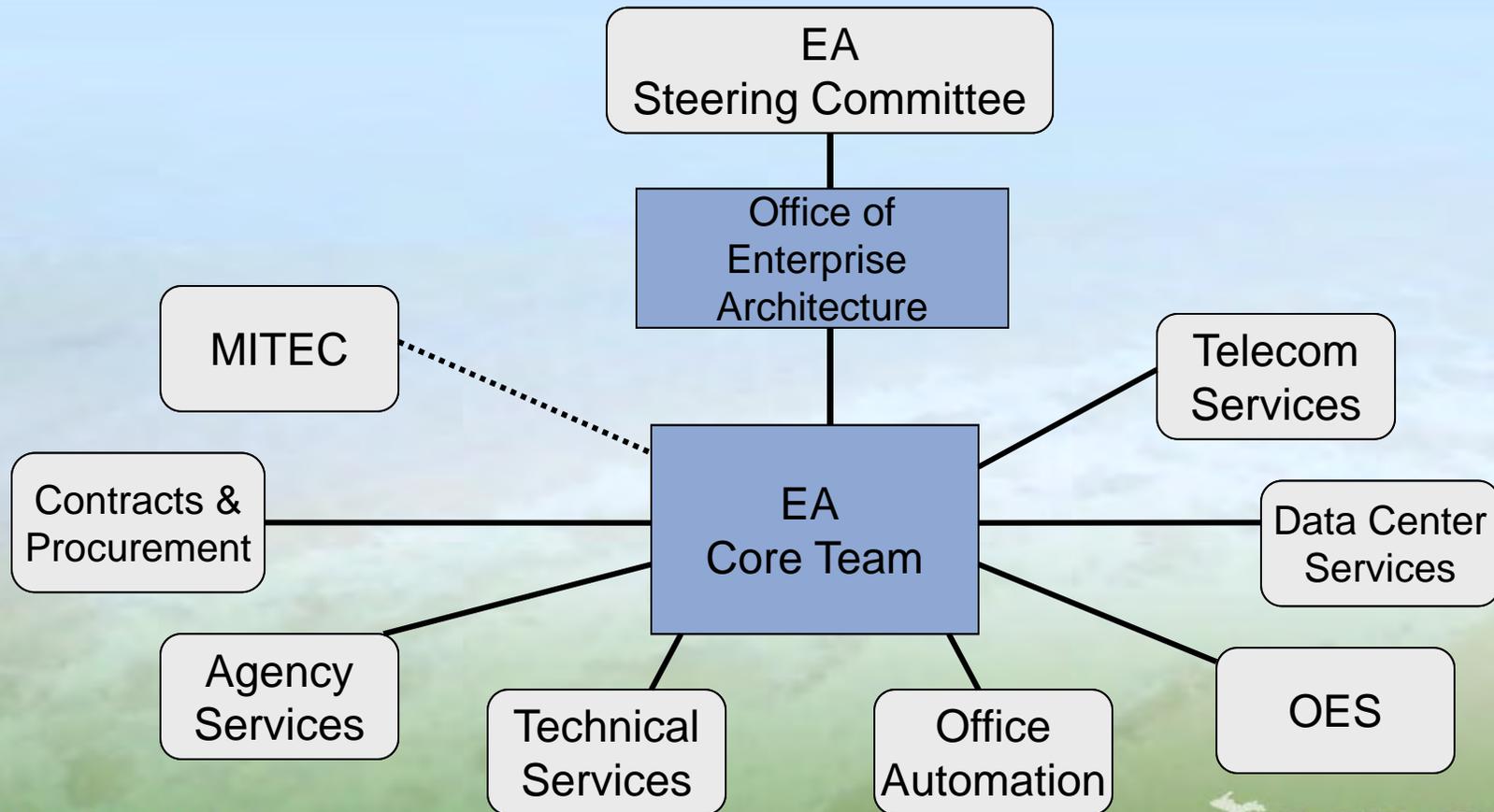
- Aggressively pursue new and promising technologies to meet known business requirements.
- Facilitate issues between other information technology groups to move difficult issues forward for the good of our clients
- Aspire to be a learning organization.
- Clearly and consistently document solutions, pertinent research, findings, decisions, recommendations, standards, and all other outputs for both immediate and future guidance.

# Today - EA Provides

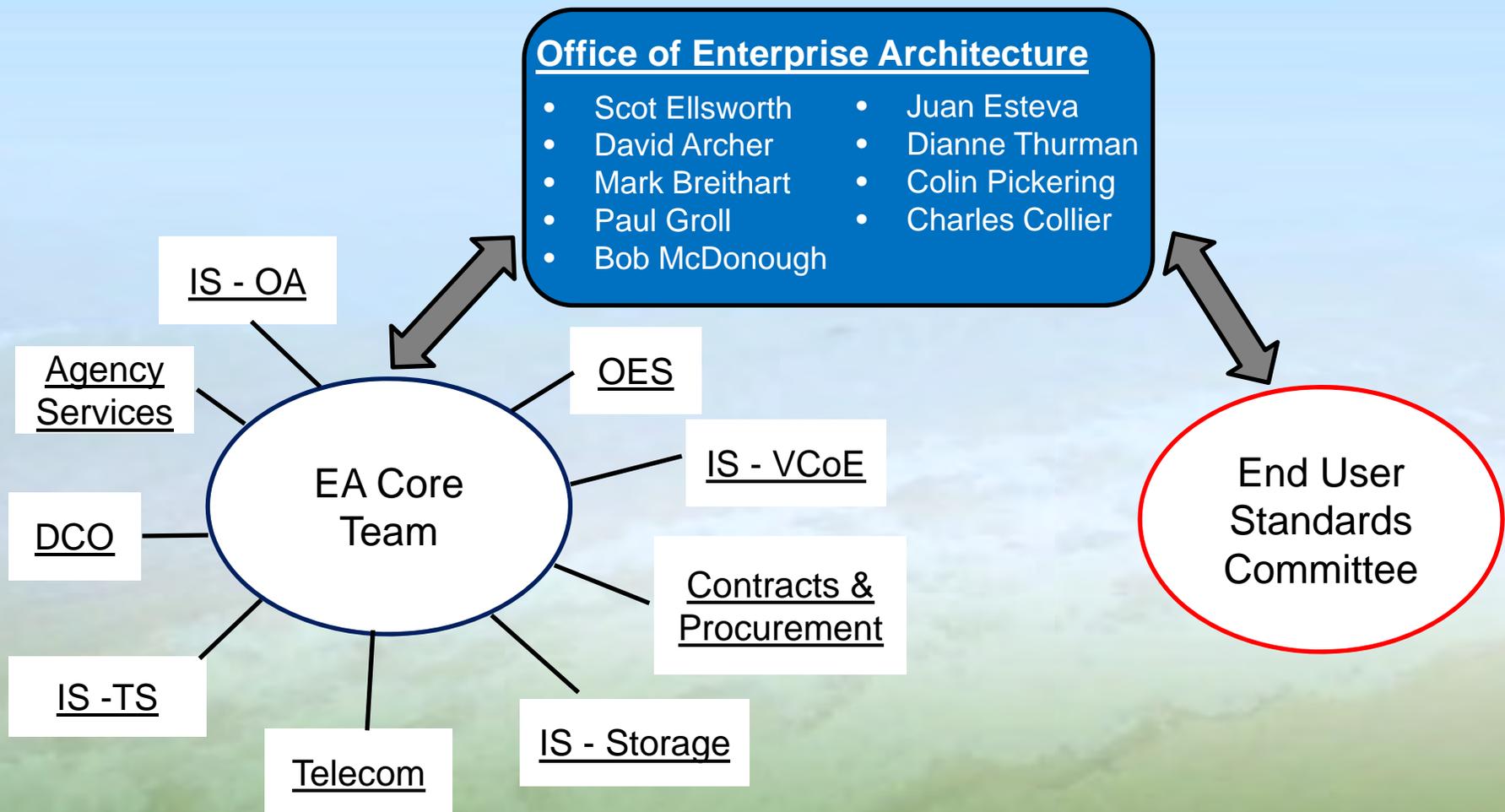
- Business and IT Strategies
- Project Consulting
  - Directly with AS and IS project teams
  - Involved with RFP/JEC
- Technology Workgroups
- IT Solution Review Process
- Technology Adoption
- Technology Standards Governance

# Organized to Deliver

*Pulling together technology leaders across the enterprise...*



# How we are organized



# EA Core Team Members

- ◆ 42 team members from all areas of our DTMB IT Team
- ◆ Meet weekly for consulting work shops, discuss and resolve IT issues, and future improvement SWOT analysis



# EA Core Team

- ◆ Ensures technology decisions and solutions are based on business needs
- ◆ Aligns with IT strategic plan
- ◆ Develops future technology direction
- ◆ Sets policies, standards, processes and procedures:
  - Assess technology needs
  - Evaluate, select, implement and govern solutions



# Focus on key services

- Technology Governance
- Technology Adoption
- Technology Solution Reviews

# Technology Governance

- EA facilitates three governance programs:
  - Technology Lifecycle Roadmaps
  - Controlled Innovation
    - POC
    - Pilot
  - End-User Standards

# Technology Lifecycle Roadmaps

## What are they?

- Established in 2007 as a method for tracking and communicating technology standards across DTMB
- 5-year plan for the use of a technology at the SOM
  - Represent both Vendor and SOM product lifecycles
  - Separated into 11 technology domains
    - Client & Office Suite
    - Development
    - Security
- Uses:
  - To communicate the SOM IT plan across the Enterprise
  - To guide the adoption and deployment of technology
  - As a planning tool for governance and budgeting purposes

# Technologies at the State of MI

- Total technologies: 938
- Hardware: 319
- Software: 619
- Development tools: 302
- Security: 70
- Network/Telecom: 171

# Roadmaps Defined

- Provides 5-year plan for use of technology
- Communicates the state's plan to guide adoption and deployment of technology
- Assists with budget development
- Semi-annual refresh



# Technology Lifecycle Roadmaps

*Provides status for each technology component:*

Domains • Categories • Products • Versions

## *DTMB's Technical Architecture Domains*

- ◆ Client & Office Suite
- ◆ Collaboration & Portal
- ◆ Data
- ◆ Development
- ◆ Mainframe
- ◆ Network & Telecom
- ◆ Platform
- ◆ IT Services
- ◆ Security
- ◆ Server Software
- ◆ Storage & Backup

# Sample Roadmap

State of Michigan



**DRAFT**  
**INTERNAL DTMB PLANNING USE ONLY**  
**Collaboration and Portal Technologies**  
**Lifecycle Roadmap**

Roadmap Topic:	Collaboration and Portal Technologies				
Roadmap Author:	Dave Archer, Cindy Fate, Chris Fellows, Faith Johnson, Robert Padgett, Paige Parker, Pat Ruddick, Mike Spenny, John Thompson				
Roadmap Created:	September, 2009				
Next Refresh:	March, 2011				
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015

**Portal and Web Content Management**

Vendor						
<b>Internet</b>						
Vignette						
IBM	6.x	Decline	EOL			
IBM Lotus Web Content Management (IWWCM)						
IBM WebSphere Portal	6.x			GA		
IBM WebSphere Portal	6.x			GA		
Search Engine						
Google						
Google Search Appliance (GSA)	x.x			GA		
<b>Intranet</b>						
Vignette						
VCM	7.x			GA	Decline	EOL
VAP/VAB	7.x			GA	Decline	EOL
Microsoft						
Share Point (Portal) Server	2007			GA	Decline	EOL
Share Point (Portal) Server	2010	Pre-rel.		GA		
<b>Search Engine</b>						



Modernizing Transportation with Technology



# Technology Roadmaps

- 11 technology domains have been established
- 930+ technologies have been cataloged and are tracked.
- 327 technologies are defined and emphasized as the standards to be used by state systems/projects.
- Shared with multiple units of government – locals, other states, and federal programs.

# Roadmap Terms - Vendor

## *Vendor's Lifecycle:*

- ◆ **Pre-Release:** Pre-release or beta release of technology
- ◆ **GA:** General availability (GA) of technology
- ◆ **Decline:** Decline the use of this technology
- ◆ **EOL:** End-Of-Life (EOL) of this technology due to lack of maintenance or support

# Roadmap Terms - DTMB

## *SOM Perspective:*

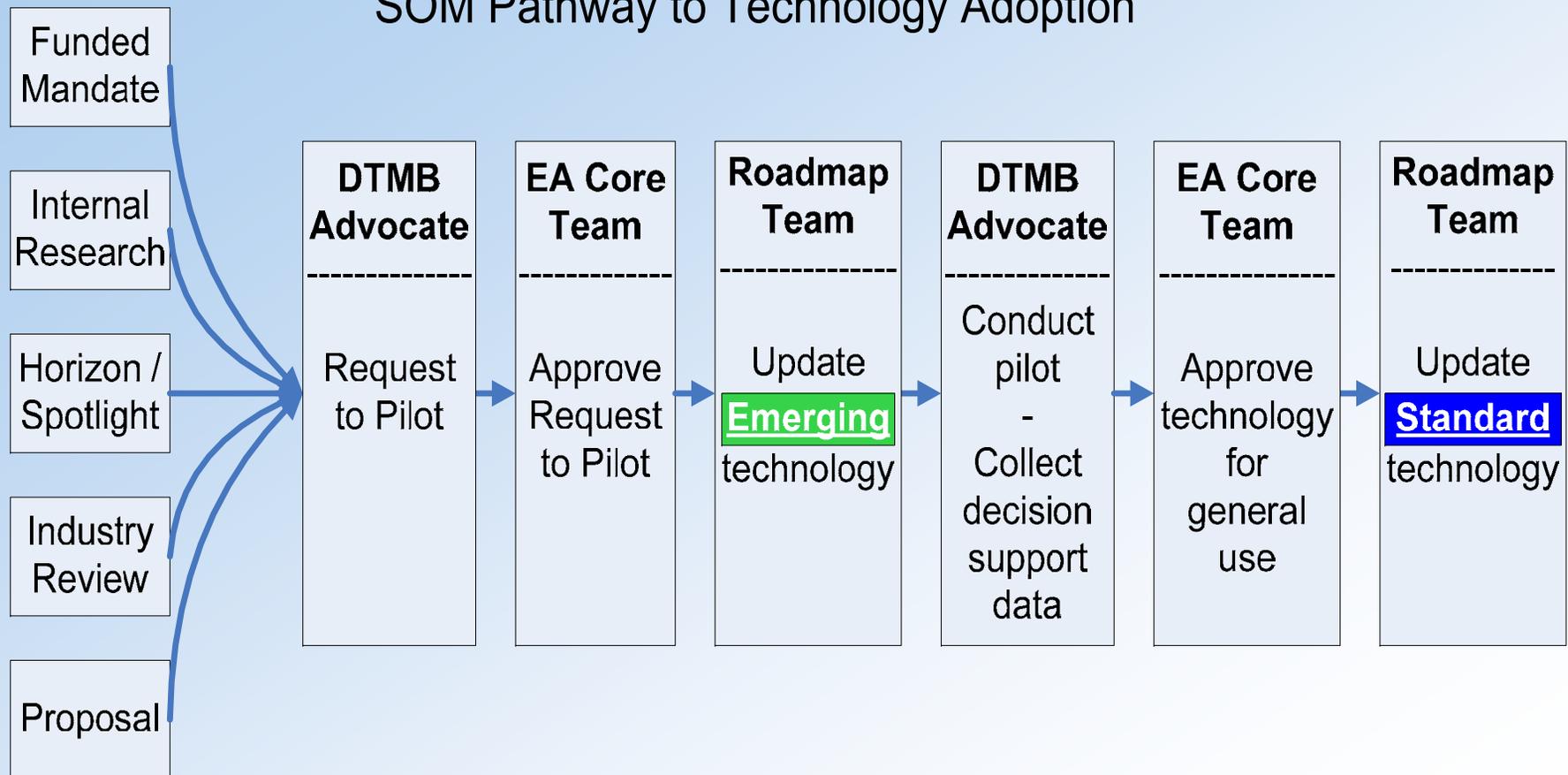
- |              |                                                                                       |
|--------------|---------------------------------------------------------------------------------------|
| ◆ Emerging:  | In pilot or deployment phase                                                          |
| ◆ Standard:  | Target for adoption whenever technically feasible                                     |
| ◆ Supported: | Deployed alternative to the standard; for use where currently implemented only        |
| ◆ Frozen:    | Direction is to reduce use and dependence over time; no new development               |
| ◆ Sunset:    | Retiring from State of Michigan enterprise; no implementation, development or support |

# Technologies at the State of MI

	<u>Tracking</u>	<u>Standard</u>
● Total technologies:	938	327
● Hardware:	319	159
● Software:	619	168
● Development tools:	302	64
■ <i>Frozen</i>	26	
■ <i>Sunset</i>	44	
● Security:	70	70
● Network/Telecom:	171	101

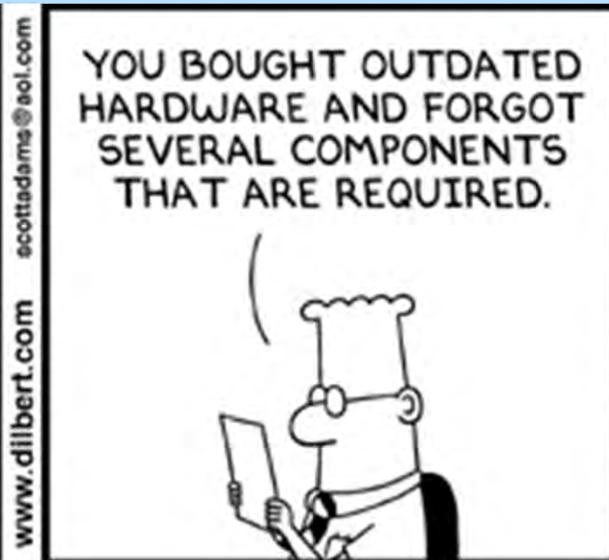
# Technology Adoption Process

## CONTROLLED INNOVATION SOM Pathway to Technology Adoption





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www.dilbert.com scottadams@aol.com

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# Testimonials

"EA assessment workshops are a critical planning step in the development of innovative IT solutions for agencies. These workshops ensure we are adopting technologies that can supported and leveraged as we strive for an enterprise approach to systems development." - *Jim Hogan, DTMB DHS IO*

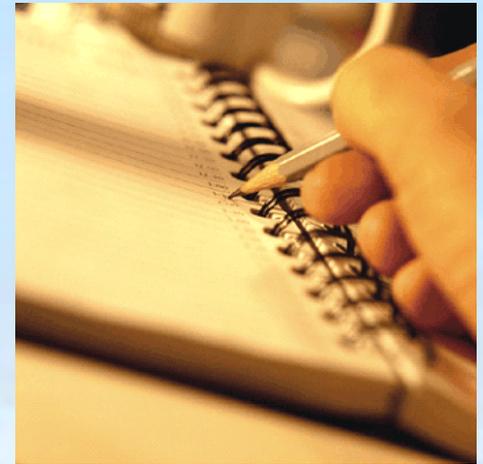
Enterprise Architecture allows the E-Michigan Team ready access to basically free consulting. They have been a valuable resource on our IBM portal migration and related risk management, exploring a SMS Texting solution, direction on SharePoint as the replacement for the Intranet portal, and helping with a Mobile Application Strategy.

– *Tom Weston, DTMB e-Michigan Director*

# Goals of EA Solution Review

## *The end game*

- Solutions delivered using proven, supported technologies
- Overall number of supported technologies reduced
- Solutions designed according to IT strategy, principles, standards, and best practices
- Citizens receive best possible services for the best possible total cost of ownership



# Objectives of Solution Assessments

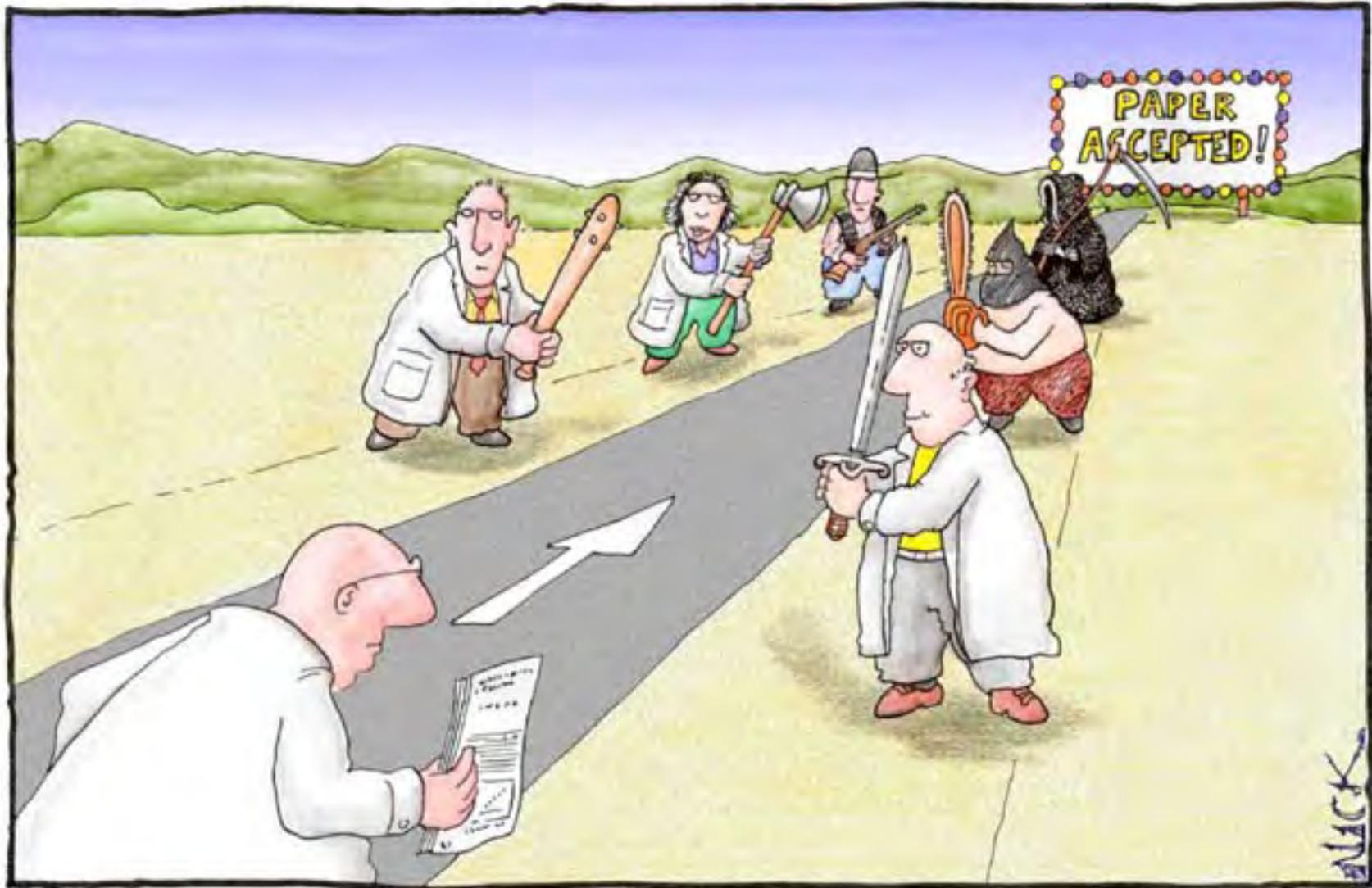
## *The power of information*

- One common way to capture key information
  - Useful for the project team / system owner
  - Useful for other DTMB teams – IS, OES, Telecom, and other AS teams
- Establish library of solutions for state systems
- Establish knowledge base of technology components
  - Where used?
  - How are they used?
  - Who's using them?

# EA Solution Review Process

## *The EA Core Team reviews State IT Solution Assessments*

- **Solution**: A system of business practices, IT components, techniques, and support activities that satisfy a specific business requirement
- **Solution Assessment**: A comprehensive description of a solution and its components
- **Solution Components**: All of the hardware, software, and tools that make up the solution



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'



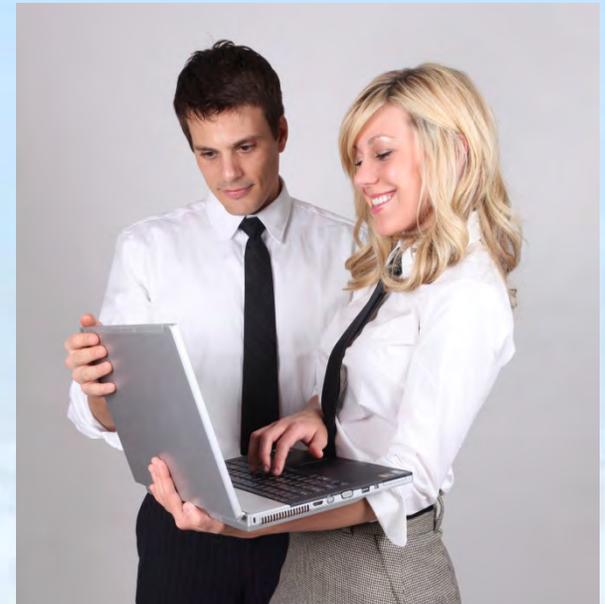
# Evaluation

- OUTSTANDING
- Excellent
- Very Good
- Average
- Below Average

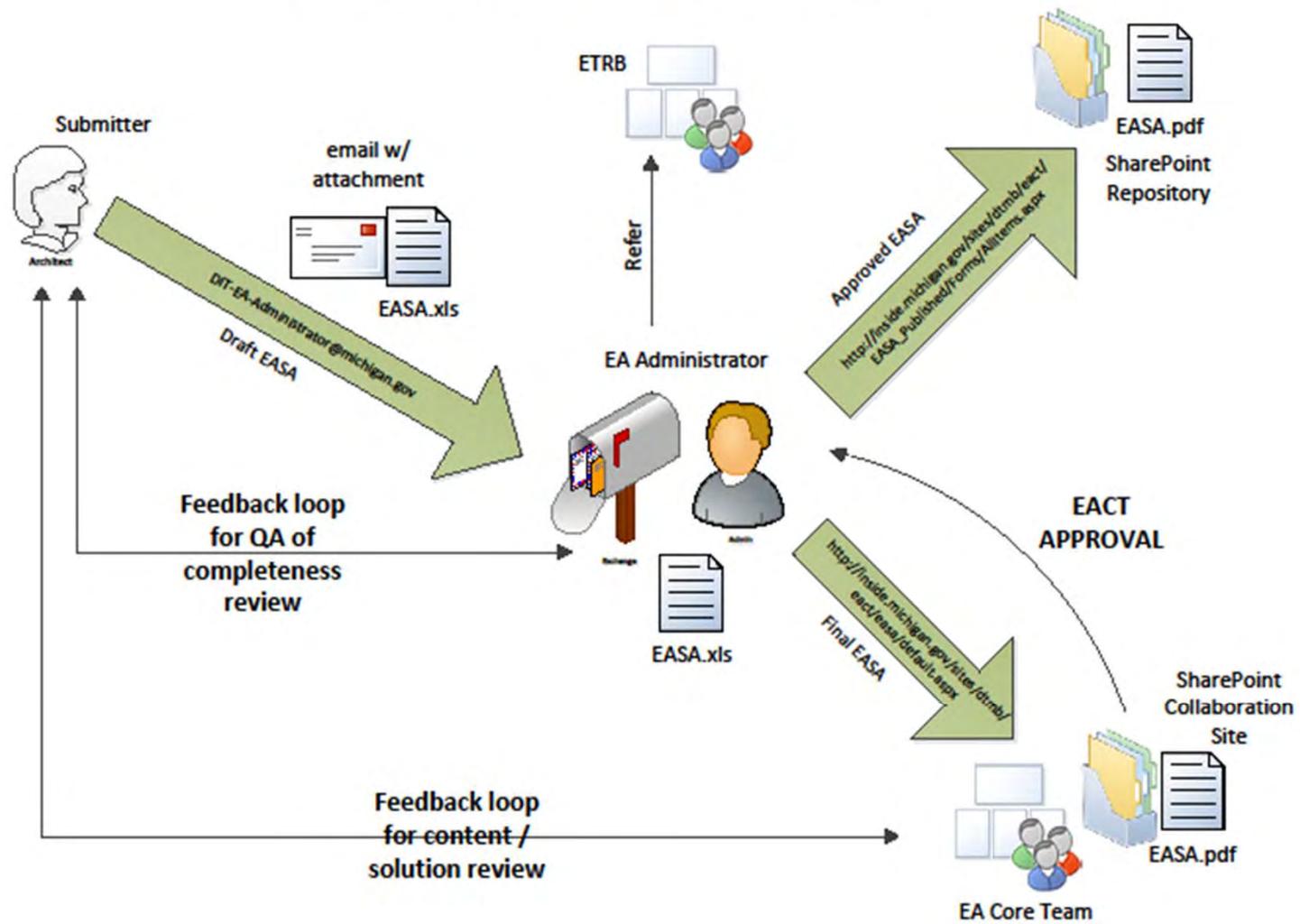
# EA Solution Assessment

## *The assessment tool*

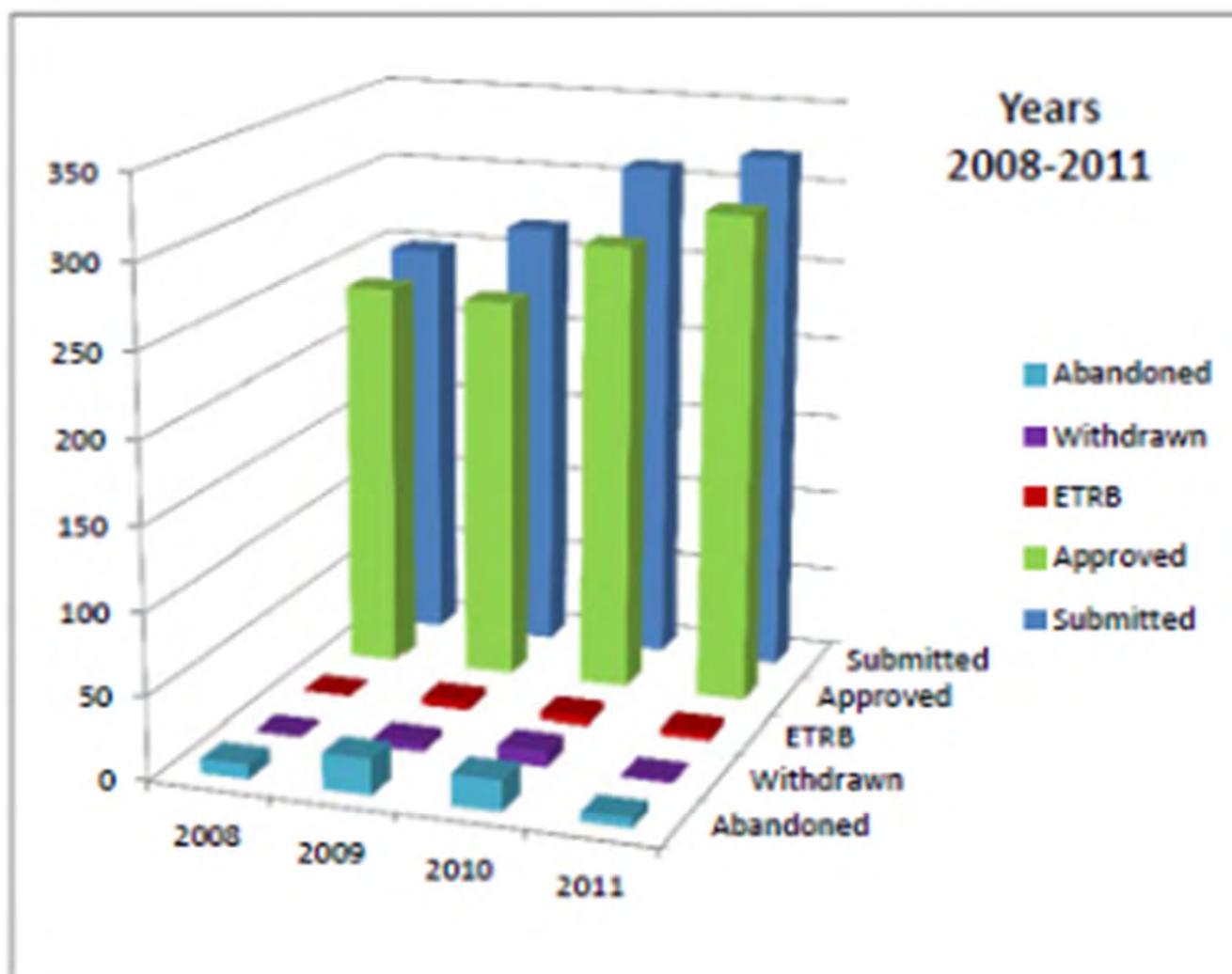
- Presented as a series of questions, drop-down lists and diagrams
- Details the key components of a solution
- Entered using our MS Excel tool



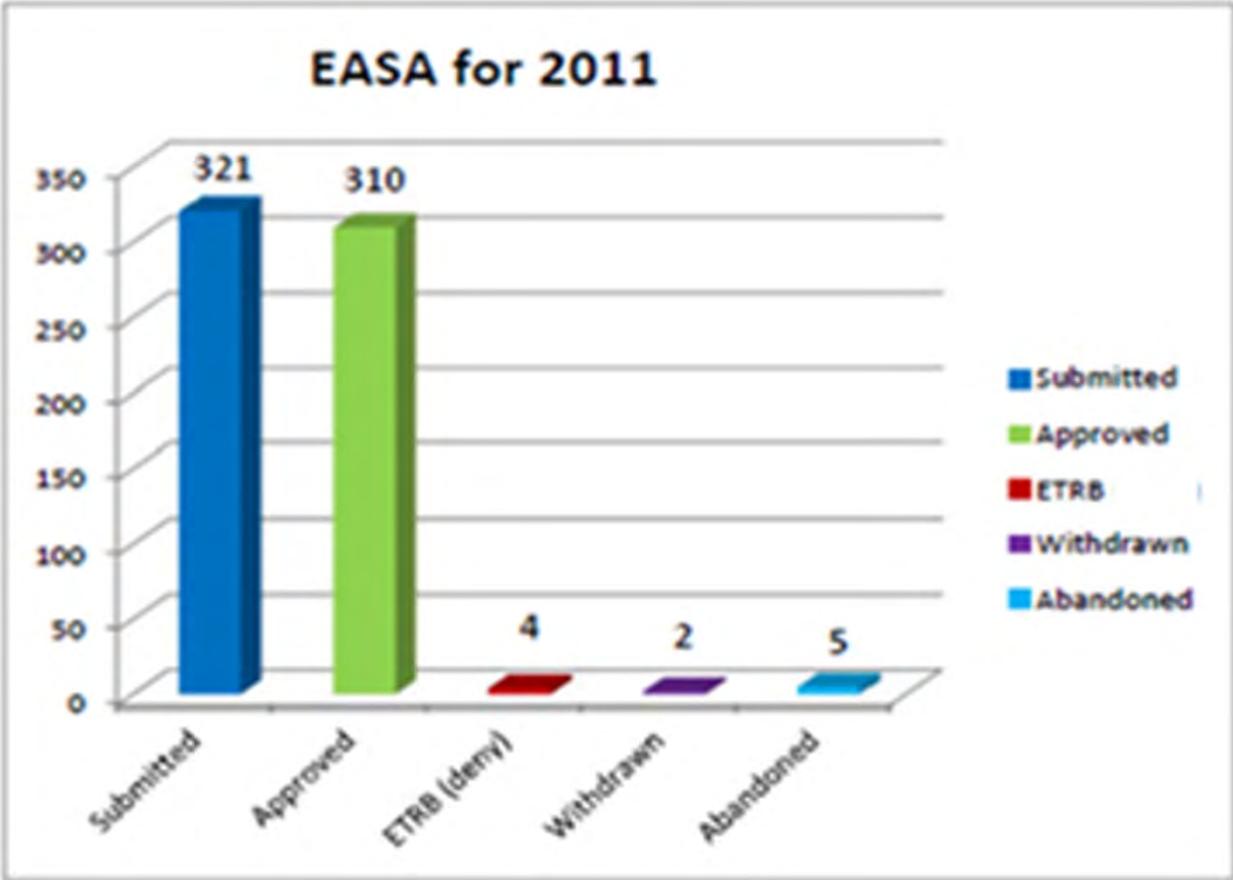
## Summary of EA Review & Approval Process



## Solution Assessment Review Statistics



# Summary 2011 EA Solution Assessments



# Testimonials

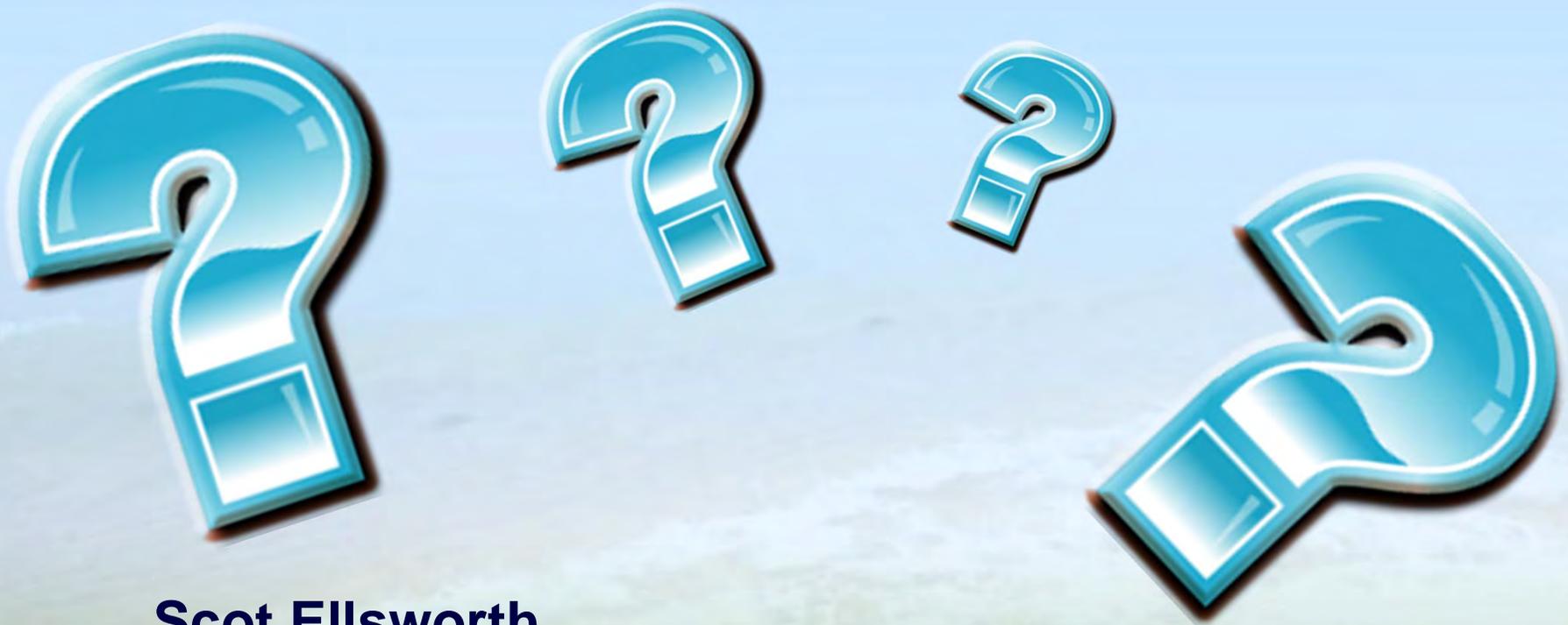
"EA processes are well documented and easy to follow. They are designed to minimize the need for meetings to get things done, and they provide clear direction on how to keep projects moving" – *Dave Al-Ashari, DTMB Telecom Manager*

"EA is viewed as a partner, advising board and a competent resource in resolving IT challenges." – *Andrei Verevko, DTMB DCH Manager*

# Value EA Provides to Strategies

- EA provides the bridge between business drivers and technology capabilities.
- Our visibility to enterprise needs enables us to look broader at opportunities to improve service, improve efficiencies, and lower costs.
- EA is a valuable resource for our teams to leverage in a proactive manner, in fact we have proven success when engaged early in the concept or idea stage of a project.

# Questions?



**Scot Ellsworth**

*Chief Enterprise Architect  
State of Michigan*

