

State of North Dakota
Innovative Technology Forum



“Enterprise Architecture: Creating the Future”

North Dakota Heritage Center Auditorium
January 23, 2003

Panelists

- Boris Miller, Moderator
- Curtis Wolfe, CIO
- Cathie Forsch, Tax



Panelists

- Roger Hertz, Human Services
- Jeff Carr, Lead Architect
- Jenny Witham, Lead EA Designer
- Pat Forster, Job Service



Curtis Wolfe

Chief Information Officer



"Would you tell me, please, which way I ought to go from here?" asks Alice.

"That depends a good deal on where you want to get to," said the cat.

"I don't much care where," said Alice.

"Then, it doesn't matter which way you go," said the Cat.

- Lewis Carroll's
Alice in Wonderland

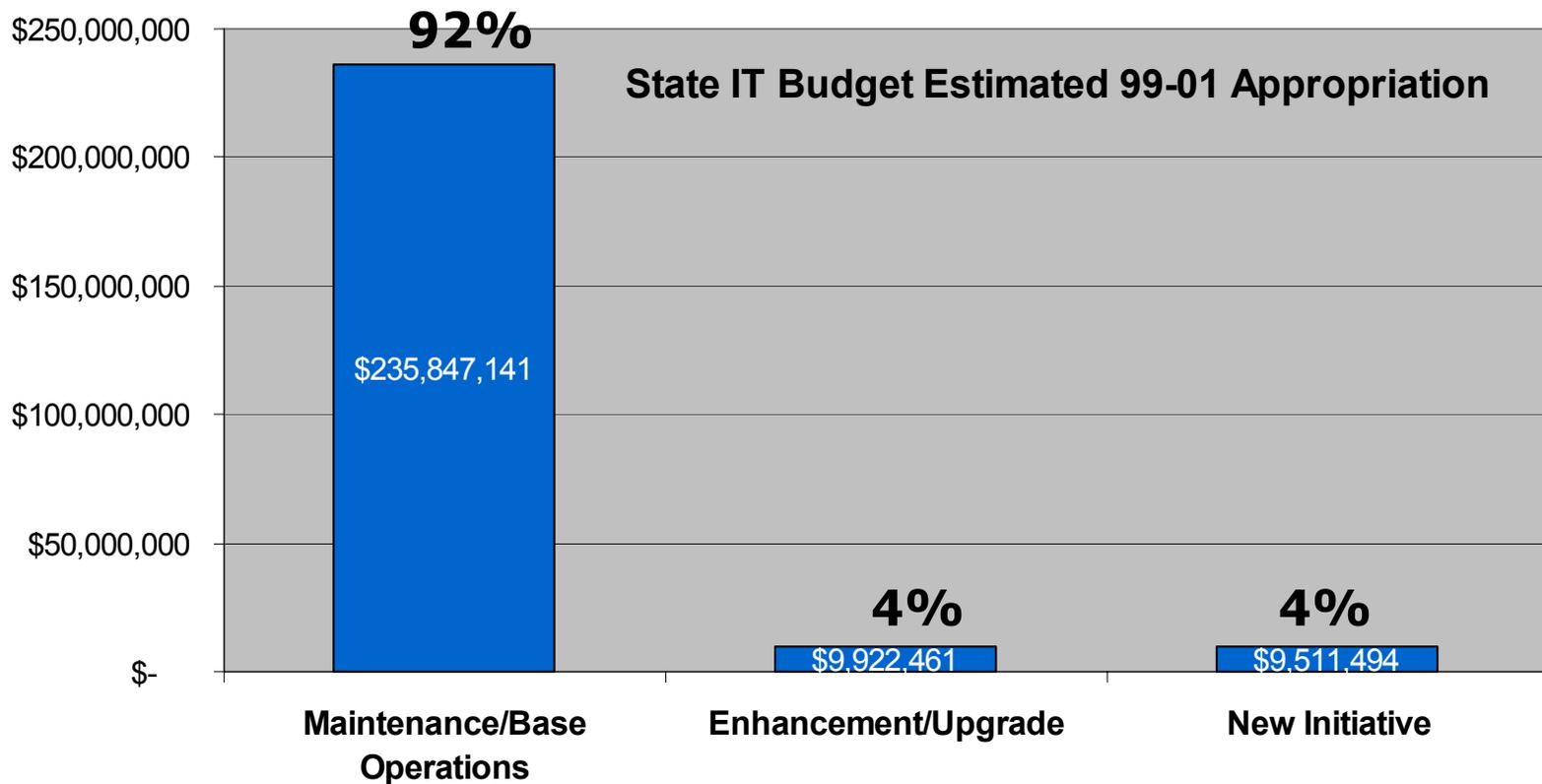


2003 Legislature

1. What is the main purpose of your agency?
2. How do you measure the achievement of your purpose?
3. What can the legislature do, financially and otherwise, to help you achieve your purpose?
4. How can you report (measure) your results so the public can easily understand your purpose and evaluate your effectiveness?



State IT Budget 99-01 Appropriation by Category



"The best way to predict the future is to create it."

- Peter F. Drucker



“What is EA?”

Boris Miller

Enterprise Architecture Lead



*Can you imagine an organization
without **management**?*



*Can you imagine an organization
without **Enterprise Architecture**?*



Gestalt Theory

Example of a clock...

*Whose fault is it,
if the clock does not work?*



Pack of Cards

Shuffle the pack. How many permutations are there?

Or, to put it another way, if you shuffled two packs of cards separately, what would be the chance they'd be in the same order?



The Odds

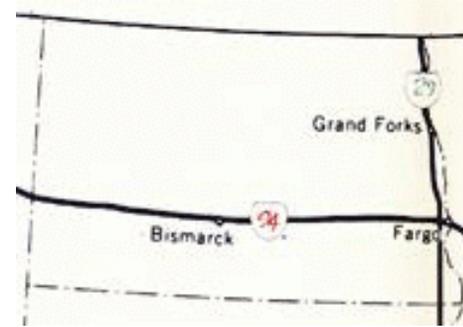
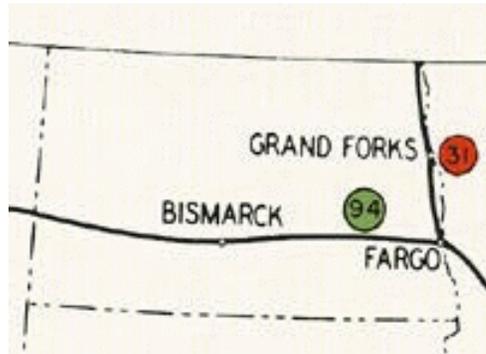
- *Answer is:*

80658175170943878571660636856403
76697528950544088327782400000000
0000

- Or about 8×10^{67}
- To work this out, it's $52 \times 51 \times 50 \times 49$
 $\times 48 \dots \times 3 \times 2 \times 1$.



Highway Architecture



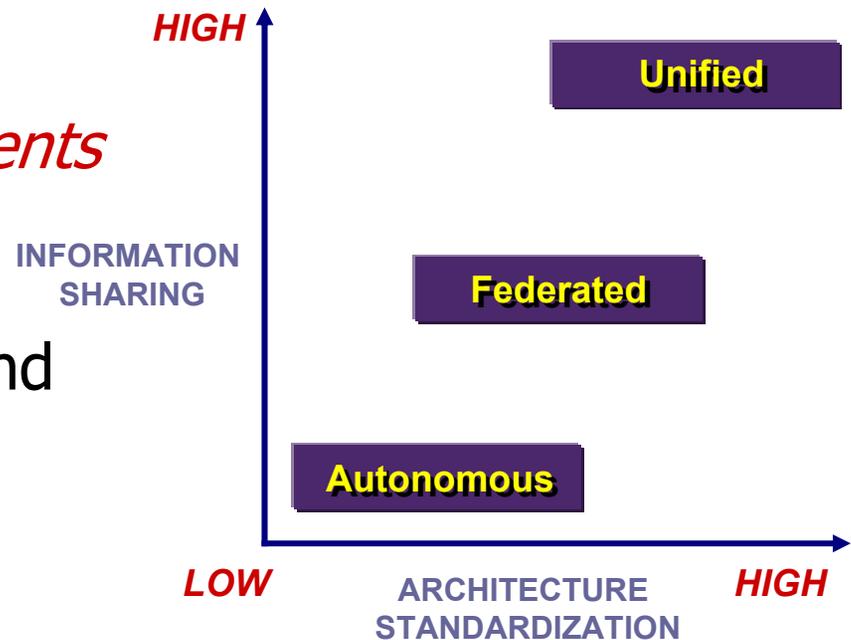
1957 draft of plans for the Interstate highway system had I-31 running between Fargo and Pembina; I-29 had been designated from Sioux Falls, S.D. to Kansas City, Mo.

By the time the plan was finalized in June 1958, I-29 was extended north to its present position.
Maps courtesy of AASHTO



Federated Architecture

- Does not specify standards for *unique department requirements*
- Facilitates interdepartment information sharing and *interoperability*
- Reduces TCO through leverage of *common facilities*
- Focus on *shared benefits* and common architecture elements



EA is About Working Together

Like
gears
on a
clock!

Executive Advisory Committee

Curt Wolfe

Architecture Review Board

Architecture Team

Jeff Carr

Application Integration

Jeff Carr

Application Software

Dan Fisher

Data/Information

Jeanette Hoffman

Network/Video

Glen Rutherford

Platforms/Oper Systems

Pat Forster

E-Government

Maryls Jangula

Data Storage

Jerry Slag

Office Automation

Gary Vetter

Document Mgmt

Treva Beard

Security

Al Veit

Implementation Phases

- *Design: January – June 2002*
- *Development: July 2002 – February 2003*
 - *12 teams , 25+ agencies, 80+ participants*
 - *Principles, future state, gap analysis*
- *Transition: March 2003 – June 2003*
 - *Process integration*



“Why we care!”

Cathie Forsch

Architecture Review Board



Why We Care

- We are citizens
- We are taxpayers
- We want to do a good job
- Our work needs to add value in business terms

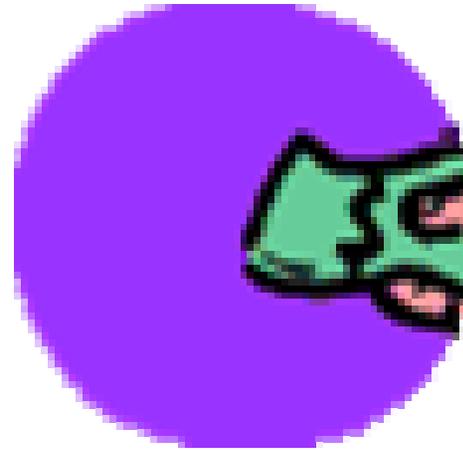


Creating Change

- IT viewed as an expense



- IT viewed as assets measured by business value



Enterprise Architecture

- Plan business strategies
- Relate business strategies to technology needs
- Integrate information across agency boundaries
- Plan an budget for obsolescence
- Determine priorities base on value



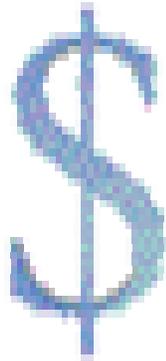
Will do.....

- Reduce complexities
- Reduce support costs
- Identify opportunities for managing customer expectations
- Operate effectively and efficiently



ENTERPRISE ARCHITECTURE

ADDS VALUE



“Why we care!”

Roger Hertz

Architecture Review Board



(Not quite 10)

Top Reasons We Care About EA

9. Supplemental Resources

- Number two problem (lack of money first, lack of people is second) doesn't seem like we ever have enough
- Access to pool of resources on technology
- Leverage lesson's learned or research completed



(Not quite 10)

Top Reasons We Care About EA

8. Cost

- EA should reduce costs, by leveraging the collective expertise of the entire state, rather than just one Department
- Helps to reduce “run the business” costs so dollars can be made available for projects to “enhance our business”



(Not quite 10)

Top Reasons We Care About EA

7. If the Packers had EA, they would be in the Super Bowl!!!!!!??



Jim Biever



(Not quite 10)

Top Reasons We Care About EA

6. Results in Better Communication and Coordination

- Formalized what has been fairly informal
- While it has a process it does not have a lot of “red tape”
- Provides an on-going forum for general technology and specific technology issues



(Not quite 10)

Top Reasons We Care About EA

5. You'll get "free" CPU from ITD! (Just kidding)



(Not quite 10)

Top Reasons We Care About EA

4. Because the Legislature Cares

- The legislature (and us) wants to be assured that state government is working together and are providing technology efficiently. The benefits are credibility and funding
- The legislature (and us) want to avoid technology “failures.” EA will help increase our success rate



(Not quite 10)

Top Reasons We Care About EA

3. You get to spend time with Mike Ressler!!!!!!



(Not quite 10)

Top Reasons We Care About EA

2. We will have a shared common vision on technology

- The vision will provide the roadmap as we make day-to-day decisions on our technology
- If everyone knows where we are going, we are likely to get there!



(Not quite 10)

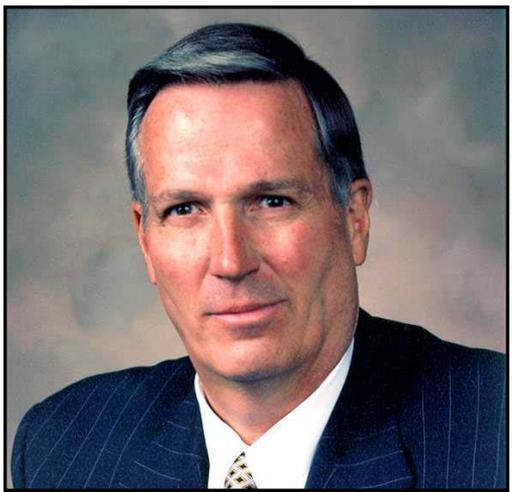
Top Reasons We Care About EA

1. You will become better looking!!!!

Before EA



After EA



“How does EA Work?”

Jeff Carr

Architecture Team Lead



Remember the Goals

- Create value by assuring that our IT infrastructure:
 - Meets current business needs
 - Is capable of changing to adapt to future business needs



Step 1: Define Business Needs

- Business needs are not an IT issue
- IT must understand these needs to provide the services required to meet them



Step 2: Conceptual Architecture

- Business needs are distilled to a Conceptual Architecture that defines Principles that guide IT design
- Examples:
 - Secure the Enterprise
 - Optimize for the Enterprise



Step 3: Definition of Future State

- IT staff creates a description, or design, of a Future State that embodies the Conceptual Architecture Principles
- Non-IT staff ratify this Future State
- This is an iterative process



An Example: Single Sign On

- Our Conceptual Architecture includes principles that state:
 - IT investments should be optimized for the Enterprise
 - Our IT infrastructure must provide Enterprise level security



IT interprets these Principles

IT security staff, from multiple agencies, meet and decide that if we are to meet these two principles, all users should have one, and only one, account that provides access to all needed resources



Definitions of Standards

- After ratification, Single Sign on is transformed into an IT standard
- **For example**, this standard might require that all user accounts are defined in Active Directory



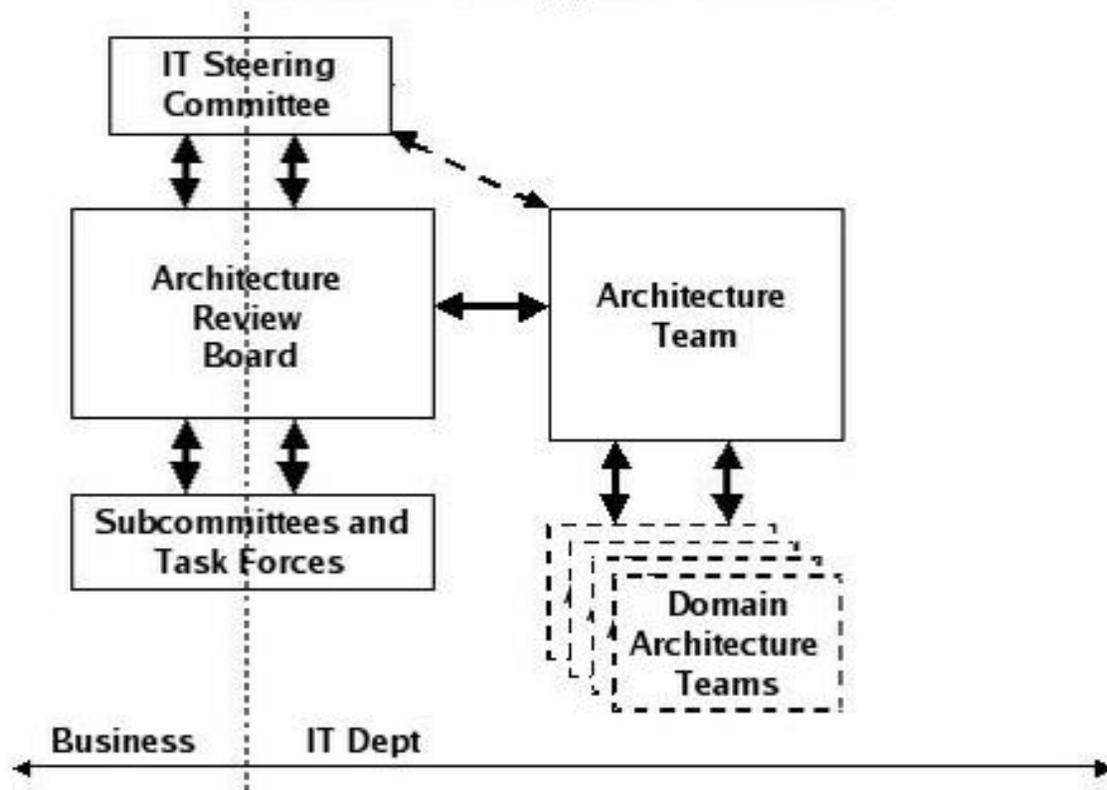
This standard guides future IT projects

- With this standard, anyone considering a new IT system will know that it must use the single sign on mechanism
- Over time, we reach the nirvana of one user and one (and only one) account



Organizational Structure

Organizational Entity Relationships Architecture Approval Process



EA is more than Standards

Direct products:

- Enterprise principles & standards to define future state
- Research papers
- Actionable statements of direction to achieve future state

Indirect products:

- Formal project alignment through architecture review
- Focus for technical guidance & IT strategic planning



Keys to Success

- Continued agency participation and support
- Integration with other processes
 - Strategic planning
 - Project management
 - Business continuity
 - Asset management



“How do projects fit in?”

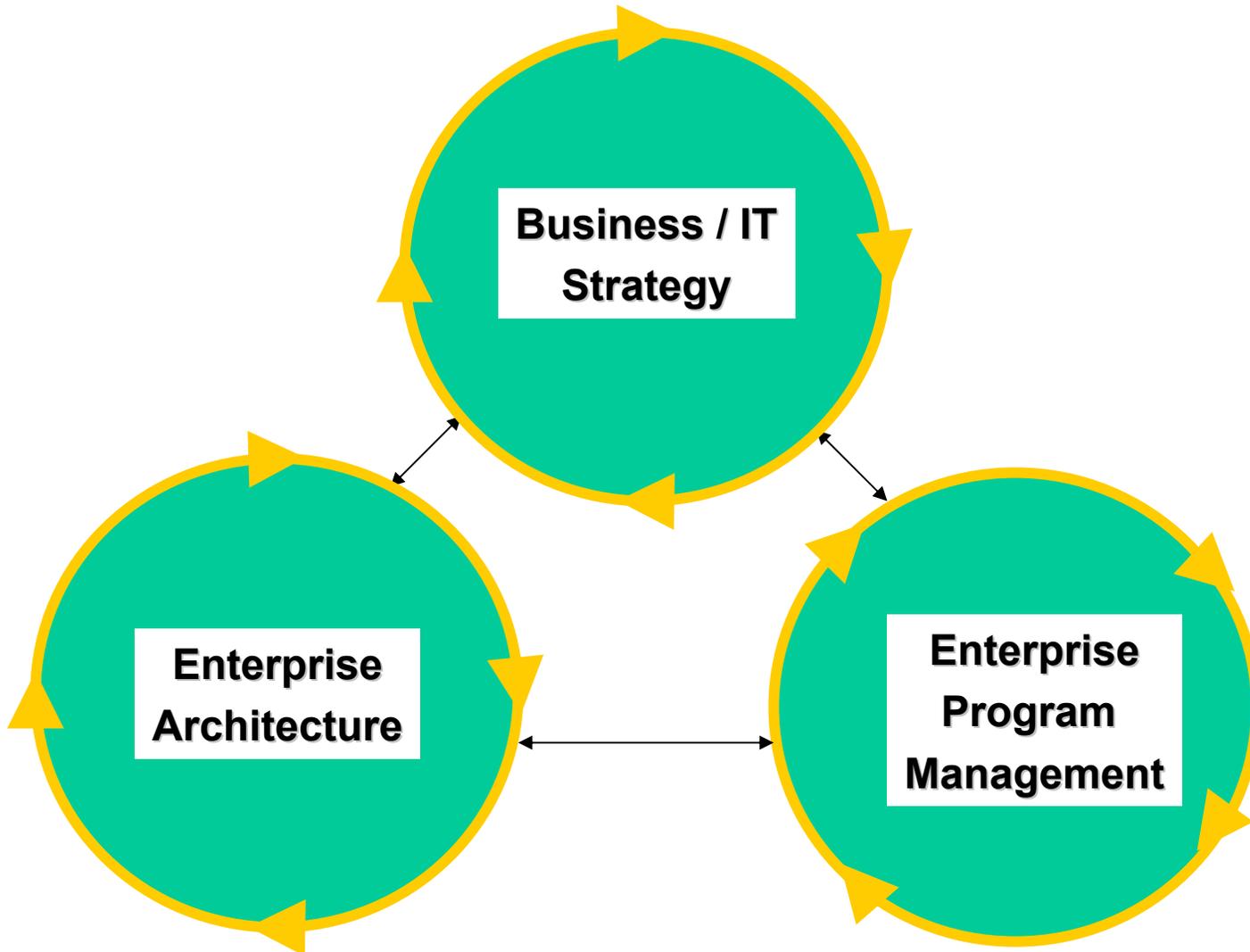
Jenny Witham

Enterprise Architecture

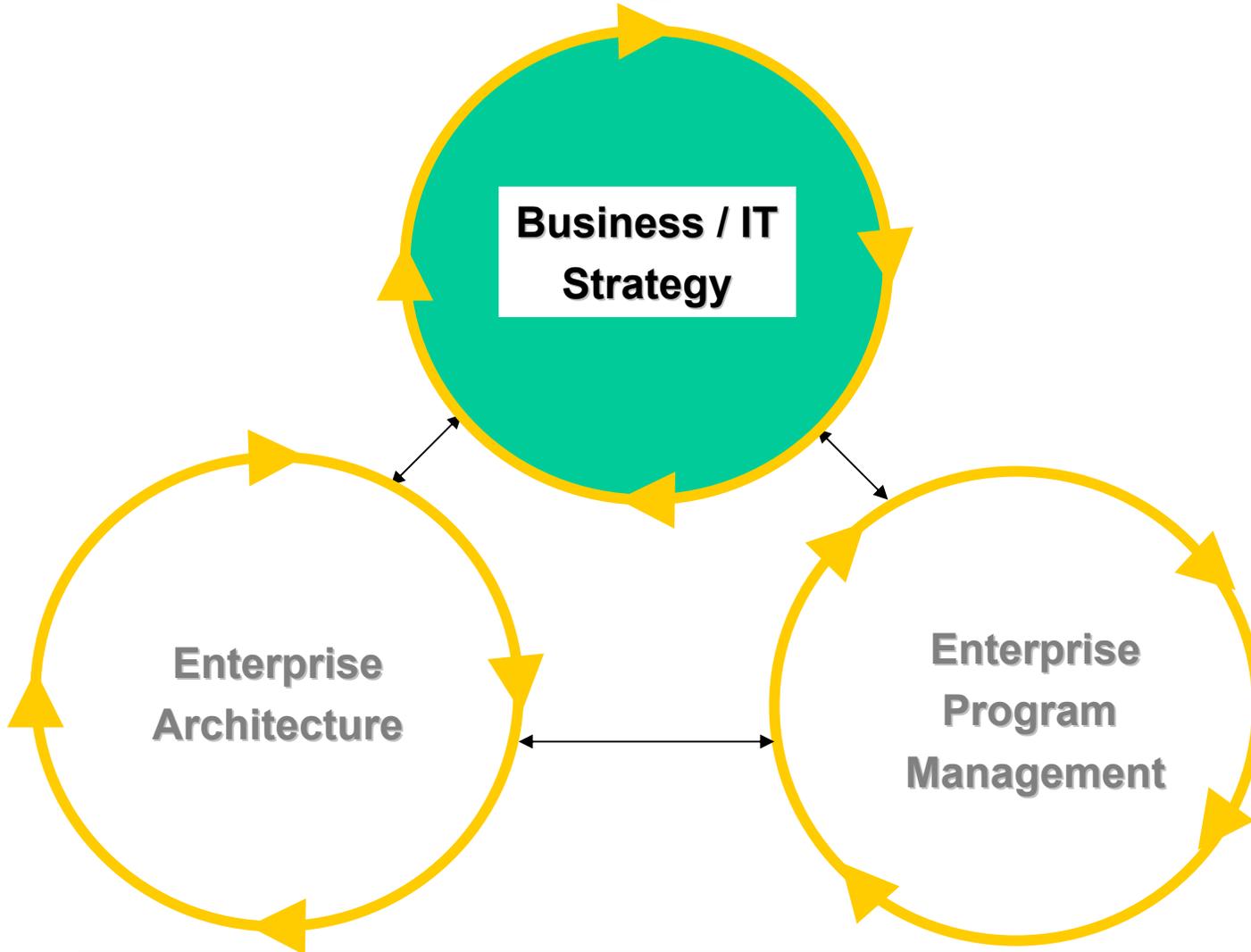
Design Lead



Enterprise Systems



Align



Align

**Business / IT
Strategy**

Design

**Enterprise
Architecture**

**Enterprise
Program
Management**



Align

**Business / IT
Strategy**

Design

**Enterprise
Architecture**

Build

**Enterprise
Program
Management**



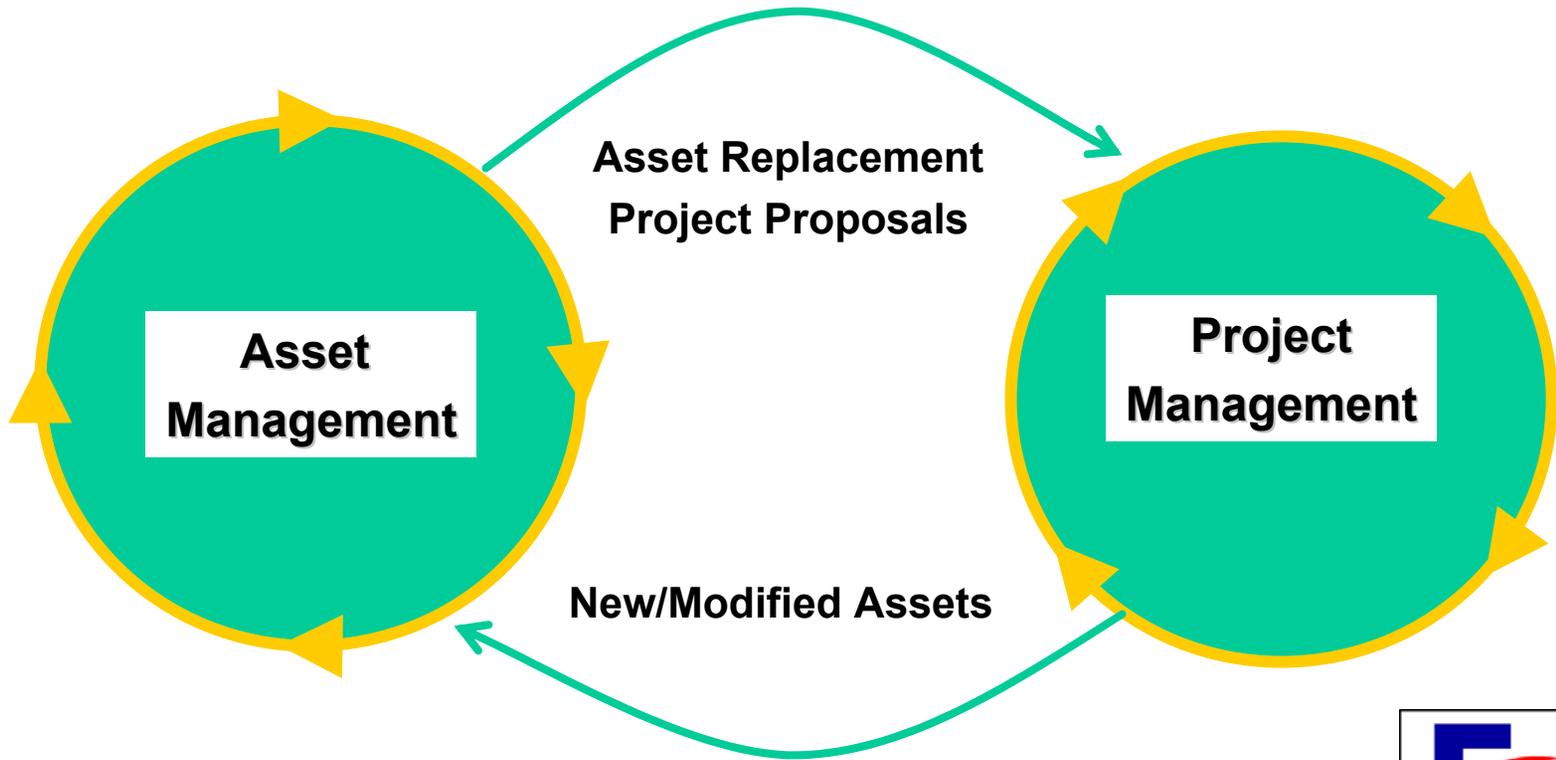
Where do projects fit in?

Projects are the *Build*

- They are the actions that create the future state
- Enterprise Architecture provides the blueprint (design models) and the building codes (standards)



Design



Build



How will this happen?

All projects will be reviewed for alignment with the future state architecture.

When will this happen?



Implementation Phases

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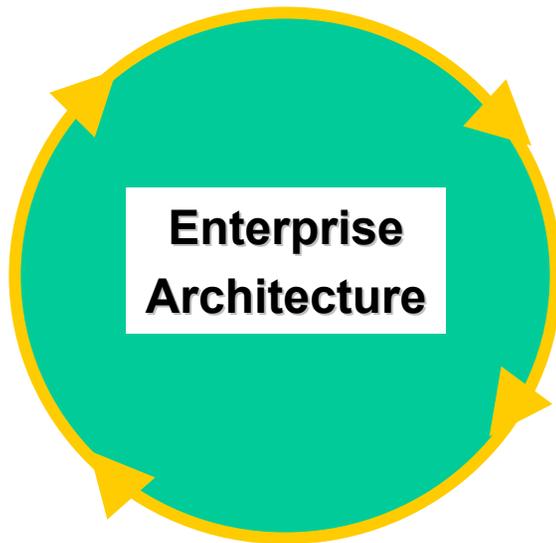
Enterprise Program Management Workgroup



- Project Initiation
- Business Case
- Project Charter
- Project Plan
- Methodology & Processes



Enterprise Architecture



Development:

- Principles
- Future State
- Gap Analysis

Transition:

- Standards Review
- Process Integration



www.state.nd.us/ea

Enterprise Architecture Home Page - Microsoft Internet Explorer

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EA

North Dakota

Enterprise Architecture | Designing the Enterprise

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Architecture Alignment Integration

What is Enterprise Architecture?

Enterprise Architecture (EA) a process will that will not only drive continuous business and technology alignment, but provide an overall plan for designing, implementing and maintaining the underlying infrastructure to supports information sharing and resource optimization.

Within individual agencies we have done an excellent job of supporting agency business needs with technology. Our opportunity is to leverage this experience and knowledge into enterprise solutions that supports the future of North Dakota and the citizens we serve.

EA offers a model for accomplishing this shared mission.

To receive notices of team activity, [sign up here for the EA listserv](#).

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Internet

Innovative Technology Forum

“How do you use it?”

Pat Forster

Platforms and Operating
Systems Lead



Enterprise Architecture As A Resource For State Government



Example: TCO Study

Request from OMB
to EA:

“Provide Definition
of PC Total Cost of
Ownership and
recommended
replacement cycle”



Why develop a TCO white paper?

- Assist OMB analysts in understanding PC total cost of ownership so they can convey those ideas to legislators in support of agency IT budgets
- Provide agencies a tool for planning their PC replacement cycles



PC TCO Subgroup

- TCO Subgroup Lead, Kelly Klein
- Members recruited from Platforms & Operating Systems Domain, Office Automation Domain, Architecture Team spanning 10 agencies

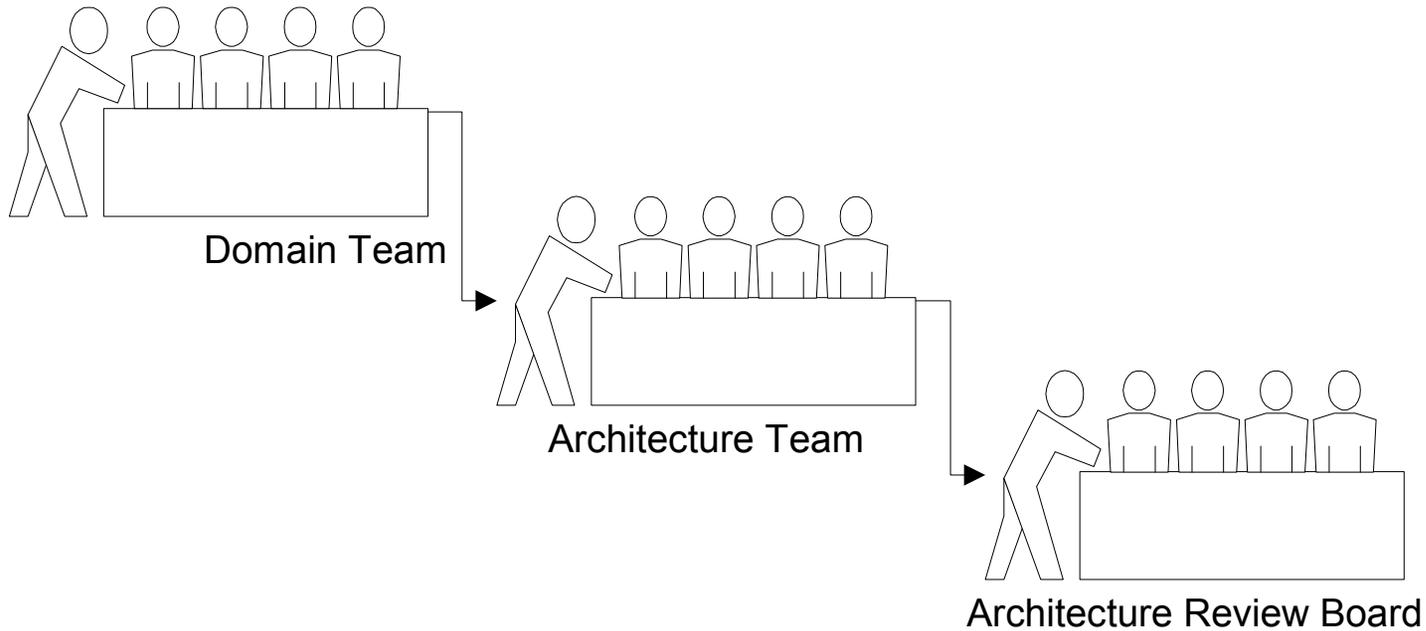


Developing the Product

- Defining the request with OMB Analyst
- Brainstorming sessions
- Authoring—review sessions
- Feedback session with OMB
- Review with Meta Group



Recommendation & Approval



A Resource is Born!

- White paper published as an Enterprise Architecture document
- Published on the EA website
- www.state.nd.us/ea/research



Curtis Wolfe

Chief Information Officer



Value of Enterprise Architecture

- Collective “brain trust” & decision making
- Leverage economies of scale and lessons learned
- Lower total cost of ownership
- Driven by enterprise business goals



Proposed Legislation

- Role of Auditor's Office
- Role of ITD
- Role of Enterprise Architecture
- Accountability



Questions and Answers



Celebration!

- Join us in the Mezzanine
- EA Domain Team Member Certificates!
- Refreshments!

- *Courtesy of AITP*



www.state.nd.us/ea

