ITANA Face2Face 2011

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IT Architects in Academia

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Agenda

- Starting Up

- Growing & Formalizing

- Bridging Business and Technology

- Leading as an Architect

- Un-conference / Hot-Topics

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Part 1: Starting Up

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Starting Up an EA Practice

Paul Hobson
Director, Enterprise Architecture
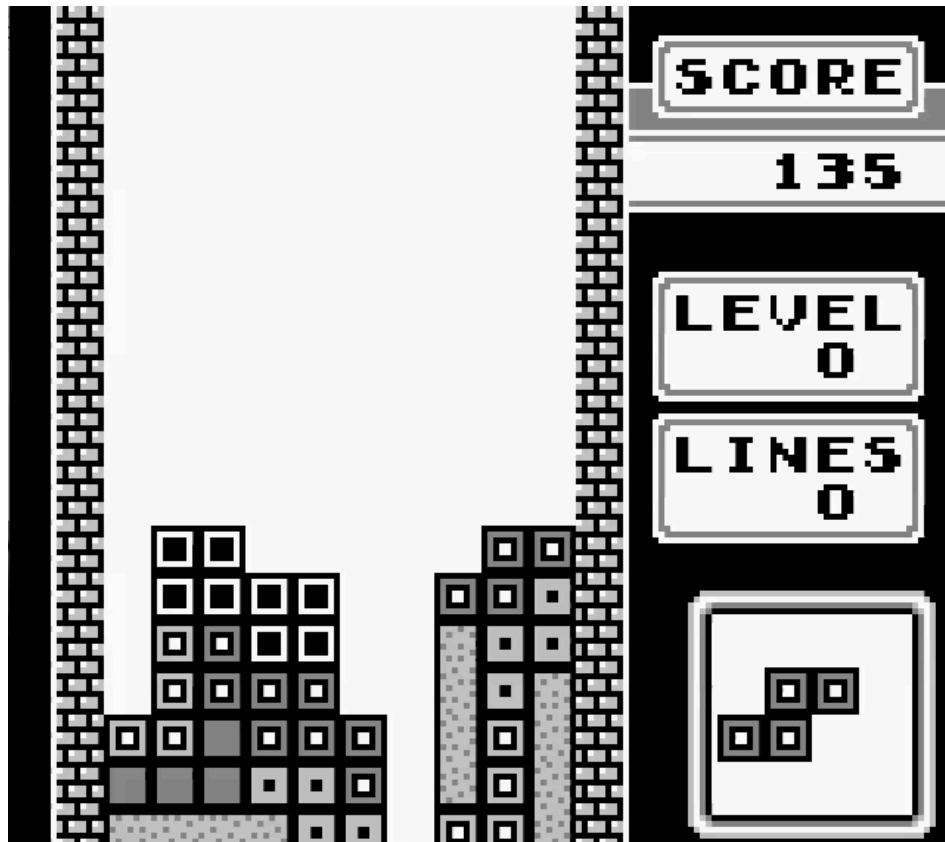The University of British Columbia

Common Views of EA

'...a coherent whole of principles, methods and models that are used in the design and realization of an enterprise's organizational structure, business processes, information systems and infrastructure.'

(Lankhorst et al, 2005)

'The fundamental organization of a system, embodied in its components, their relationships to each other and to the environment, and the principles guiding its design and evolution.'
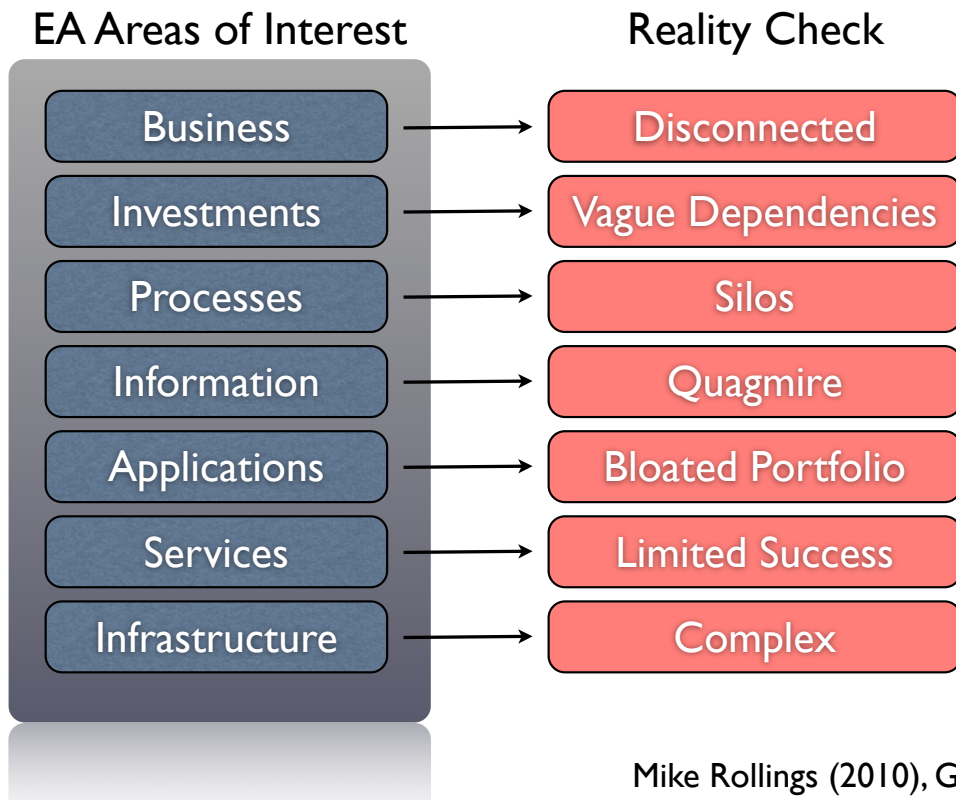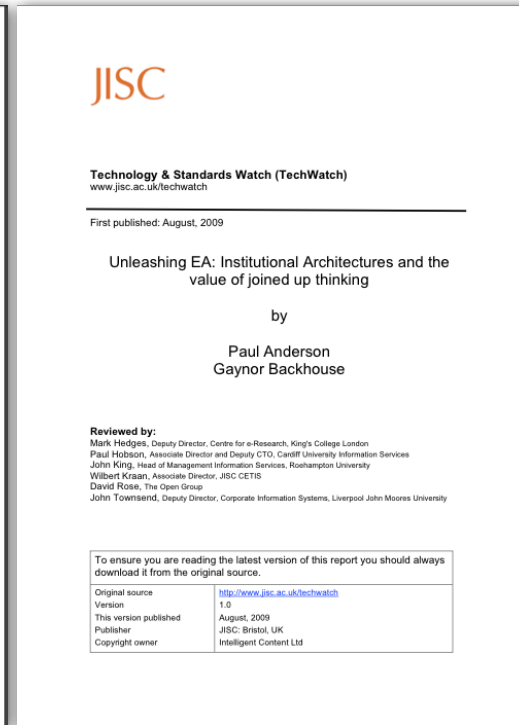
(Hillard, 2000) (IEEE1471)

...all partly true, but not
the whole picture.

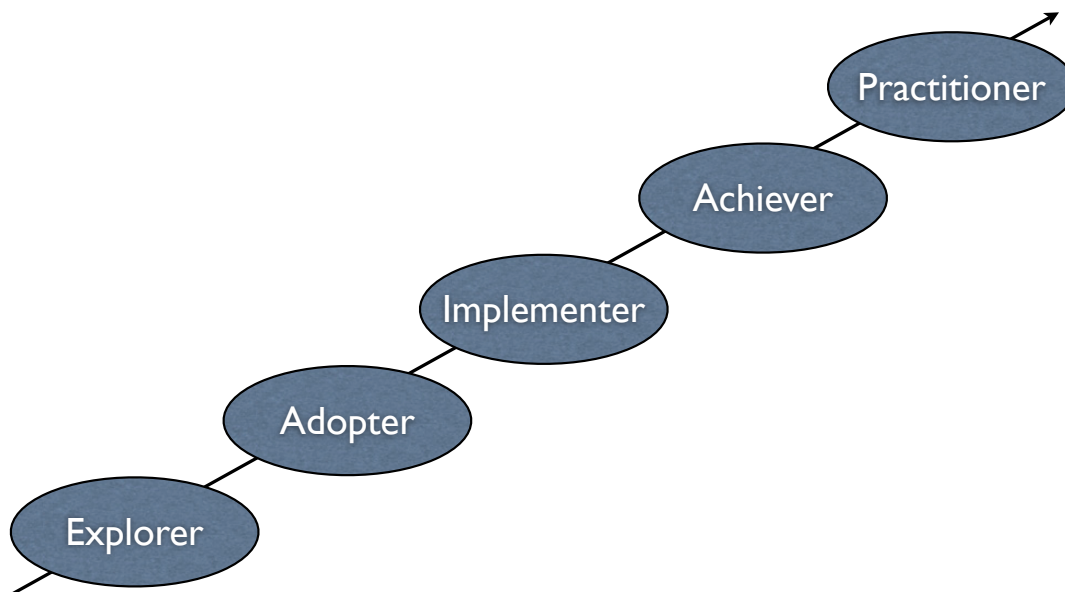# Setting The Context

Drivers: The Gap

EA Areas of Interest

EA Areas of Interest		Reality Check
Business	→	Disconnected
Investments	→	Vague Dependencies
Processes	→	Silos
Information	→	Quagmire
Applications	→	Bloated Portfolio
Services	→	Limited Success
Infrastructure	→	Complex

Mike Rollings (2010), Gartner

The Call To Adventure

The JISC "Road to Value"

The Road To Value

Explorer	researching, investigating EA, identifying potential change projects, developing a case
Adopter	planning, orienting, engaging with colleagues, designing a live project
Implementer	initial project under way, with training and support
Achiever	First results, impact and *value* evident - may be hard to quantify at this stage
Practitioner	EA is an established professional approach for strategic change and development

Choose your path

Tactical

Strategic
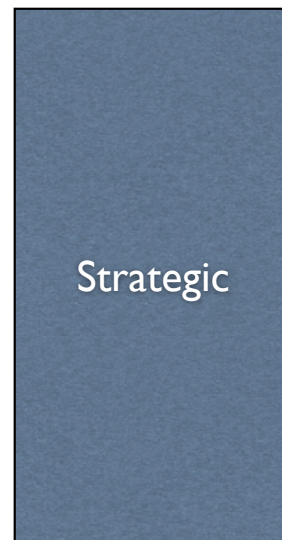
"Foster the discipline, not the devotion"

Mike Rollings, Gartner

Questions to ask yourselves

Where should I start?

What is the outcome we're looking for?

What are we trying to achieve with architecture?

What is the business question we need to answer?

What sort of things should I be producing?

What level of ambition should I have? Have far should we leap?

Spend time building principles, guidelines and standards OR develop models?

How do I 'sell' EA and the work we do to the community?

How will you split your
time between creating
outputs and building
the practice?

How will you define
the role of the
architect(s) at your
organization?

Where in the organization will the architecture function/role report?

Who do you need to involve in your architecture work?

Governance

What does your Governance model look like?

How do you measure your success?

Developing a Vision

Work Groups

The Architecture Elevator Pitch

Further Resources

A comprehensive view of the resources used in this section can be found on the ITANA wiki at: goo.gl/aoP00

"There is nothing so useless as doing efficiently that which should not be done at all"

Peter Drucker

Part 2: Growing and Maturing

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Growing an EA Practice

- ## A maturity model
- ## Governance
- ## Federated architecture

- **Carnegie-Mellon's Software Engineering Institute From Carnegie-Mellon's Software**
- **Five Stages:**
    1. Initial (chaotic, ad hoc, individual heroics) - the starting point for use of a new or undocumented repeat process.
    2. Repeatable - the process is at least documented sufficiently such that repeating the same steps may be attempted.
    3. Defined - the process is defined/confirmed as a standard business process, and decomposed to Work Instructions.
    4. Managed - the process is quantitatively managed in accordance with agreed-upon metrics.
    5. Optimizing - process management includes deliberate process optimization/improvement.
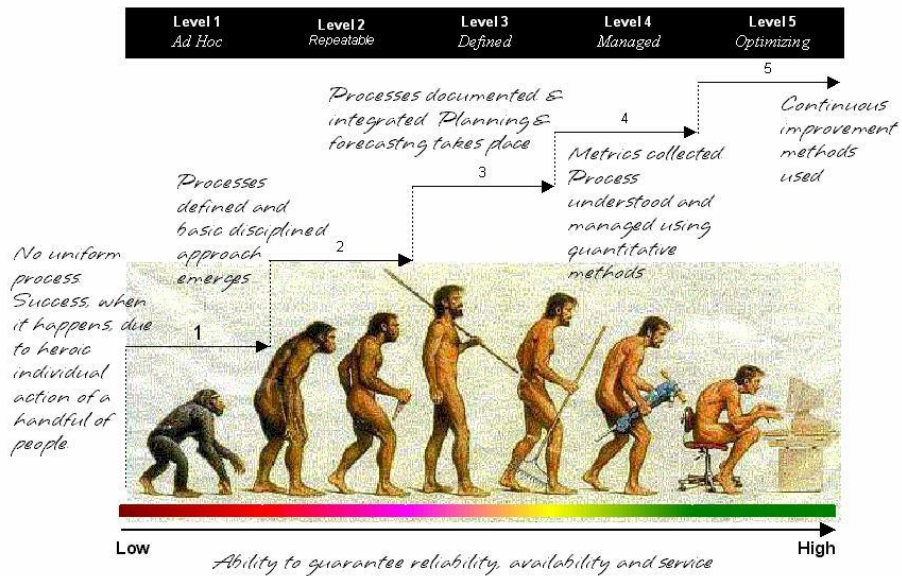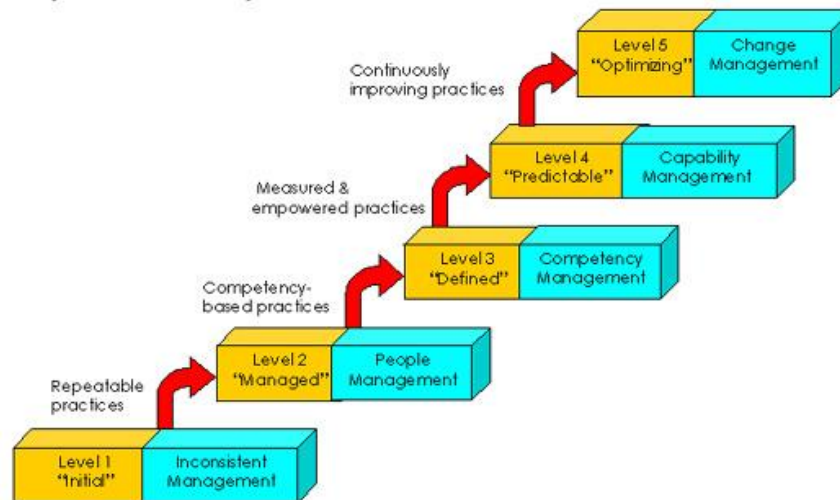
Evolution of Process Maturity

| Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Ad Hoc | Repeatable | Defined | Managed | Optimizing |

No uniform process. Success, when it happens, due to heroic individual action of a handful of people.

Processes defined and basic disciplined approach emerges

Processes documented & integrated. Planning & forecasting takes place

Metrics collected. Process understood and managed using quantitative methods

Continuous improvement methods used

Low ──────────────────────────────► High

Ability to guarantee reliability, availability and service

Illustration Copyright © 2001, Mike Tarrani and Linda Zaratre. All Rights Reserved

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People Model from International Quality Management Systems

People CMM Maturity Levels

Continuously improving practices → Level 5 "Optimizing" — Change Management

Measured & empowered practices → Level 4 "Predictable" — Capability Management

Competency-based practices → Level 3 "Defined" — Competency Management

Repeatable practices → Level 2 "Managed" — People Management

Level 1 "Initial" — Inconsistent Management

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SEO model from Search Enginuity

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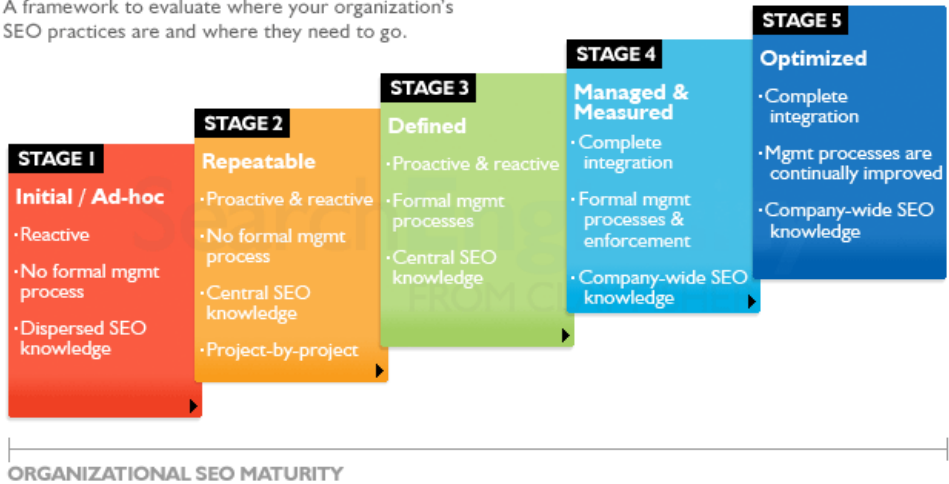
The Wisconsin-Madison EA maturity model

Level	UW-M	SEI
1	Ad Hoc	Initial
2	Basic	Repeatable
3	Standardized	Defined
4	Managed	Managing
5	Adaptive	Optimized

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Practice Maturity Model

Below is a maturity model for the practice of Architecture. It is based on the HP SOA Maturity Model as described here (specifically page 11)
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-4824ENW.pdf

Enterprise Maturity

The overall goal of an architecture practice is to grow the enterprise maturity and to enable an adaptive enterprise. The adaptive enterprise is able to quickly realign business processes and systems to support and advance strategic goals. It includes optimizing technical infrastructure and enabling improved business processes. An adaptive enterprise will also build agility for the future. Adaptation is not just change. It is not just technical change most of all.

Adaptibility	1 Ad Hoc	2 Basic	3 Standardized	4 Managed	5 Adaptive
Adaptive	Adaptation happens on a project by project basis. Change is driven by technology	Adaptation is coordinated across projects. Coordination is of technical solutions and IT resources.	Adaptation is at the business unit or complete business level (e.g. Student Lifecycle). Adaptation is driven by a single business process or strategic area.	Adaptation is happening in a coordinated way across business units and/or complete lifecycles. Adaptation is driven by common business needs and shared strategic directions.	Enterprise is designed to pursue change and to adapt quickly to new strategic directions or changes. Adaption is driven by strategic directions and strategic changes. Technology follows strategy.

EA Methodology Maturity

Process Maturity Metrics. These measure the maturity of processes used to carry out and govern the architecture in the enterprise.

Process	1 Ad Hoc	2 Basic	3 Standardized	4 Managed	5 Adaptive
Governance	Some acknowledgment of issues	Some processes for managing the architecture locally applied (individual service responsibility)	Guidelines defined and aligned for common services. Common point-of-contact for issues. Changes are approved for technical changes.	Services are managed across domains. Architecture review integrated into Project and Service Portfolio management and governance	Management of services is well aligned across the enterprise. Changes are approved at the strategy and process level.
Methodology	Unique to each project/engagement	Some basic practices are shared between projects	A standardized methodology exists and is applied loosely	Standardized methods are kept and updated. Review of activities against the standards	A dynamic methodology is actively maintained and promoted. Methodology is continually improving based on metrics and quickly disseminated to other groups.
Program Management	Architecture is project focused	Architecture efforts are business unit focused	Architecture is federated but not aligned across business units	Architecture is aligned across UW-Madison	Architecture extends to business partners outside of UW-Madison

Product Maturity Metrics. These measure the maturity of the delivered products produced by an architecture engagement. They also measure the maturity in managing the products and the impact of the delivered products on the enterprise.

Product	1 Ad Hoc	2 Basic	3 Standardized	4 Managed	5 Adaptive
Artifacts	Unique to each project/engagement	Some standard artifacts types used in all projects	A library of standard templates is used uniformly across projects. Standardized file formats are used for each artifact type.	A common repository for all standard templates is used. Change control and updates are managed uniformly	Artifacts are generated and maintained by multiple groups. Proactive development of new templates for new needs.
Repository	Artifacts are stored ad hoc as part of each engagement	A common repository is used but there is no linking between artifact types across projects	A common repository is used and artifacts can by found by type across multiple projects	A common repository for all artifacts is used. Change control and updates are managed uniformly	Repository and artifacts are used campus-wide for discovery and analysis.

Toolkit	Tools used are unique to each engagement	Some standardized tools exist.	A suite of standardized tools has been agreed upon for each artifact type. A common repository is used.	Modeling tools and model types are standardized	Tools and artifacts are used by multiple groups in a common way.
Outcome	Locally optimized for the project.				The ROI is apparent. The systems delivered advance the architecture and strategic goals. They build on rich suite of existing architecture capabilities.

Value Maturity Metrics. These measure the perceived value of the enterprise architecture practice as seen by different stakeholders.

Value	1 Ad Hoc	2 Basic	3 Standardized	4 Managed	5 Adaptive
Business Leadership	Minimal interest in Architecture	Aware of Architecture's value	Generally Complies with Architecture	Business Leadership brings domains together for common architectural management and governance.	Architecture is fundamental to decision making and projects
Engagement	Value of architecture may or may not be apparent to people involved in an engagement	Value of architecture is apparent to people involved in an engagement after the fact	People have a common understand of the value and expectations of an engagement	Engagements are entered with a well defined value expectation and metrics for measuring delivered value	Value is well understood and metrics are used to constantly adapt the practice to deliver higher value
People	Little knowledge of architecture	Knowledge limited to IT Management	Knowledge and value known to select business units and IT Staff	Business and IT understand value and seek engagement	Architecture is broadly embraced and valued and actively promoted

Level Descriptions for 11 areas of EA:
- Adaptability
  - Adaptive
- Process
  - Governance
  - Methodology
  - Program Management
- Product
  - Artifacts
  - Repository
  - Toolkit
  - Outcome
- Value
  - Business Leadership
  - Engagement
  - People

Workgroups

"Specifying the decision rights and accountability framework to encourage desirable behavior in the use of IT." **- Weill, P. & Ross, J. W., 2004,** *IT Governance: How Top Performers Manage IT Decision Rights for Superior Results*

Two Case Studies:
- *Michigan*
- *University of British Colombia*

- **State as of 2009**
  - 72 IT departments
  - 85% of all services contained within a school (based on a catalogue of 2500 services)
  - No chief information officer
  - One cross-silo "idea sharing" group – IT Commons
  - Completely decentralized, with no formal governance
  - Level 1 on the Maturity Scale

- **Changes in 2010/2011:**
  - Created CIO position
  - Combined several IT departments into "Information Technology Services", including communication, administrative systems, teaching and learning systems.
  - Created a governance body: IT Council, with sub-governance committees.
  - Began working on strategies for each of the university mission domains – Teaching & Learning, Research, Knowledge Management, Patient Care
  - Created an Enterprise Architecture position
  - 2.2 on the Maturity Scale (processes broader than local, but only followed sporadically)

- **Changes in 2010/2011:**
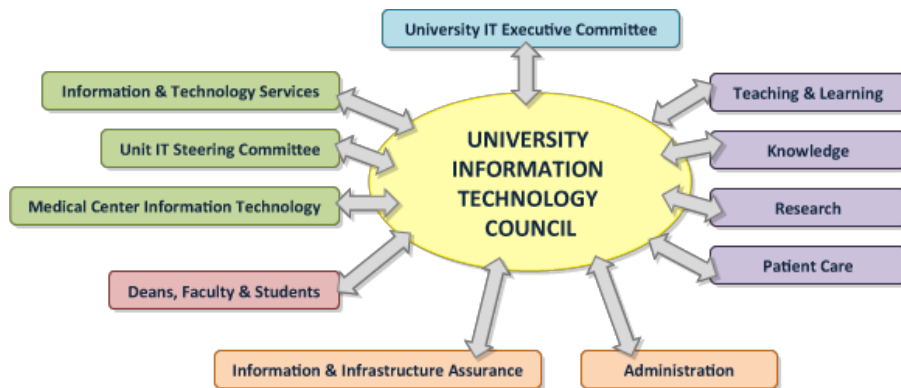
- **Changes for 2012:**
  - Complete the IT strategy for each domain
  - Begin informing IT Council of EA findings and recommendations
  - Capital request process for
    - Any project shared between schools
    - Any project, even self-funded, over $1 million
    - (semi-artificial mechanism to enforce governance)
  - 2.7 on Maturity Scale

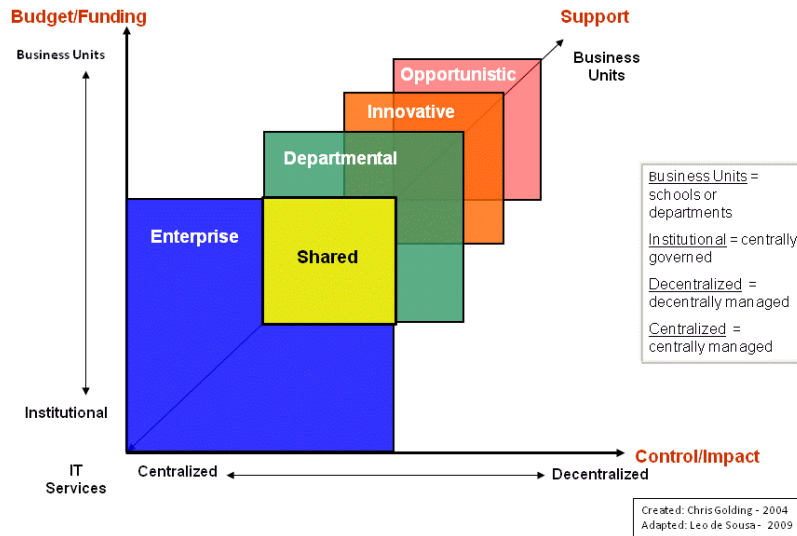- **Governance Effectiveness**
  - Very little "teeth", for instance EA is "inform only"
  - Process is still lightly defined – projects have come to IT council and been rejected for lack of appropriate information
  - University culture is "do what it takes for your school to be great"
  - Lack of defined business strategies tends to limit EA recommendations to technology only
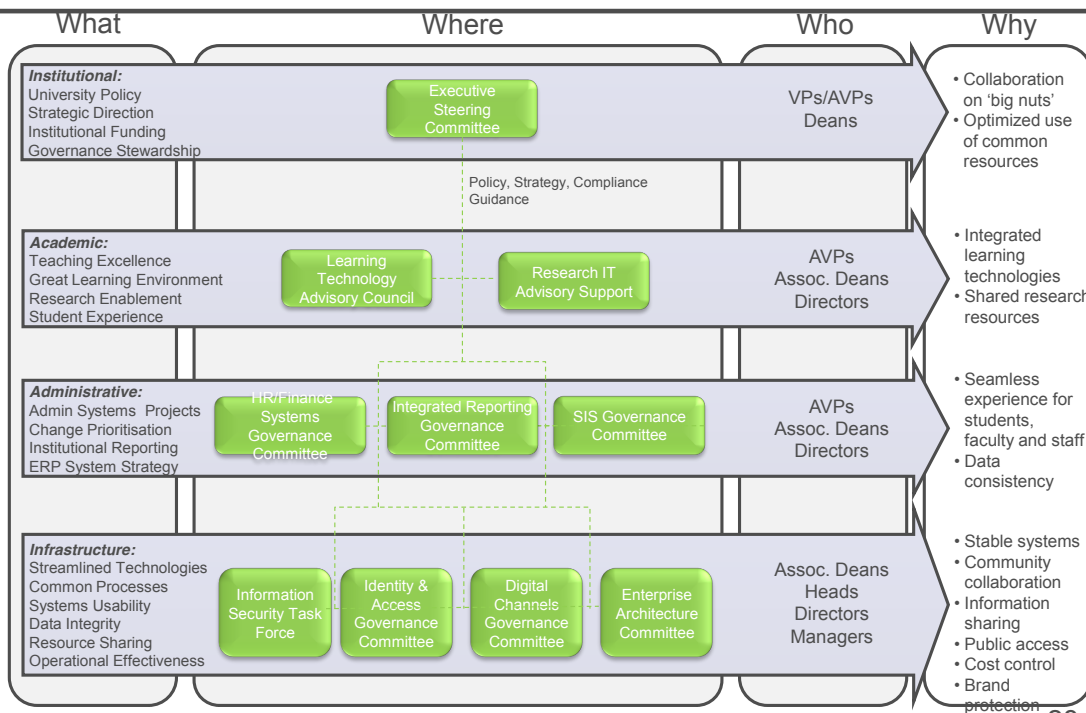 - Brand new and maturing

Case Study: University of Wisconsin - Madison

Technology Governance Model

Budget/Funding   **Support**

Business Units

Business Units

Opportunistic

Innovative

Departmental

Enterprise   Shared

Business Units = schools or departments

Institutional = centrally governed

Decentralized = decentrally managed

Centralized = centrally managed

Institutional

IT Services   Centralized ◄──────► Decentralized   **Control/Impact**

Created: Chris Golding - 2004
Adapted: Leo de Sousa - 2009

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UBC IT Governance Model

What	Where	Who	Why
Institutional: University Policy Strategic Direction Institutional Funding Governance Stewardship	Executive Steering Committee	VPs/AVPs Deans	• Collaboration on 'big nuts' • Optimized use of common resources
	Policy, Strategy, Compliance Guidance		
Academic: Teaching Excellence Great Learning Environment Research Enablement Student Experience	Learning Technology Advisory Council Research IT Advisory Support	AVPs Assoc. Deans Directors	• Integrated learning technologies • Shared research resources
Administrative: Admin Systems Projects Change Prioritisation Institutional Reporting ERP System Strategy	HR/Finance Systems Governance Committee Integrated Reporting Governance Committee SIS Governance Committee	AVPs Assoc. Deans Directors	• Seamless experience for students, faculty and staff • Data consistency
Infrastructure: Streamlined Technologies Common Processes Systems Usability Data Integrity Resource Sharing Operational Effectiveness	Information Security Task Force Identity & Access Governance Committee Digital Channels Governance Committee Enterprise Architecture Committee	Assoc. Deans Heads Directors Managers	• Stable systems • Community collaboration • Information sharing • Public access • Cost control • Brand protection

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Workgroups

- **Both of these case studies are decentralized environments. What is difference in a more centralized environment?**

- **Are there best practices that can be applied to one or both?**

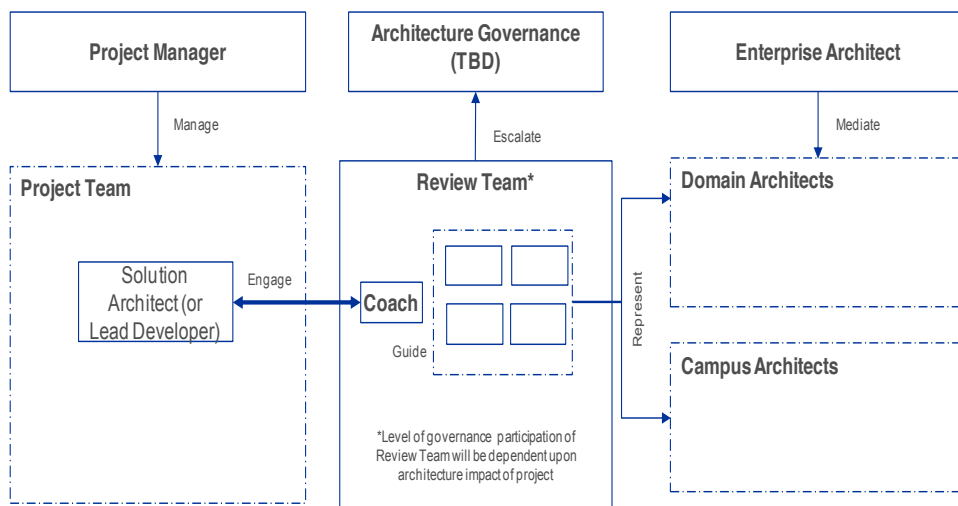- **Personal: What is the ideal architecture model for your institution?**

Two Case Studies:
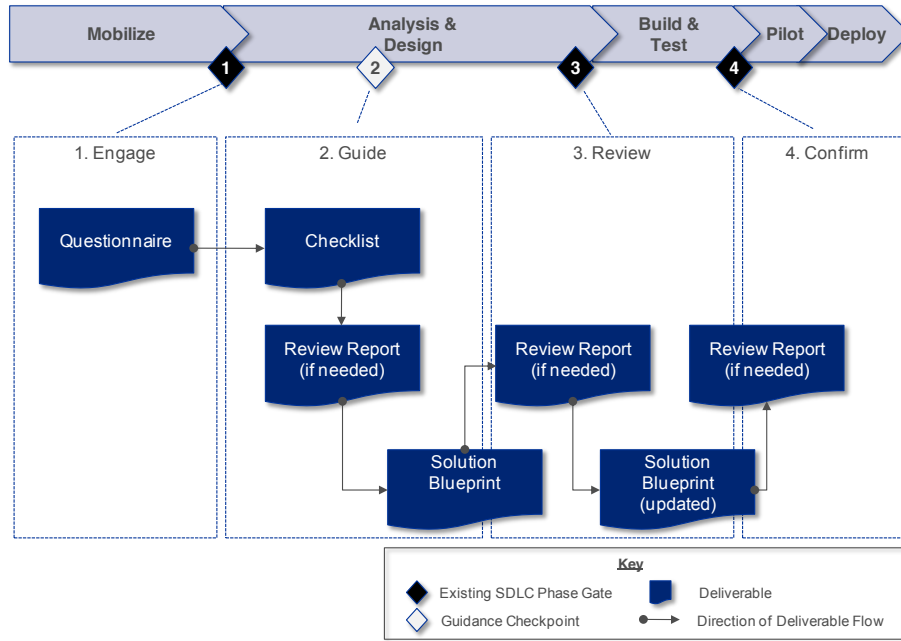
- *Michigan*
- *University Wisconsin - Madison*

- ## Architecture as of 2009
  - Completely decentralized IT "architecture"
  - Technical architecture process for Central IT projects only
  - No architecture process for enterprise, application, data, security
  - Most projects have no architecture artifacts whatsoever

- **Enterprise Architecture Challenge**
  - Chartered to align technology across campus
  - Virtually no-one on campus fulfilling even localized role of solution architect
  - Minimal budget for EA; completely funded from Office of CIO (none from schools)
  - How do we jump-start basic architecture across campus, with no resources and a decentralized environment?

Mobilize	Analysis & Design	Build & Test	Pilot	Deploy
1	2	3	4	

1. Engage	2. Guide	3. Review	4. Confirm
Questionnaire	Checklist	Review Report (if needed)	Review Report (if needed)
	Review Report (if needed)	Solution Blueprint (updated)	
	Solution Blueprint		

Key

Existing SDLC Phase Gate   Deliverable

Guidance Checkpoint   Direction of Deliverable Flow

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Workgroups

- **Pick three areas from the ones defined in the UW model and list them here.**

- **What do you think is the ideal level for each of these 3? Why?**

- **Describe the maturity levels of one (or more) practices in your group**

- **What are two or three things could those practices would change to increase their maturity?**

Work groups / Maturity Model

- **What are specific steps the practices in your group can take to make those changes?**

- **Personal: What are two or three things your institution could do in order to move to a higher spot in the maturity model?**

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Work groups / Governance

- **What are the strengths in the models presented?**

- **What are the weaknesses?**

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- **Are there best practices that can be applied to one or more of the models?**

- **Personal: What are some specific steps your institution could take to make governance function better?**

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- **What are the strengths in the models presented?**

- **What are the weaknesses?**

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- **Both of these case studies are decentralized environments. What is difference in a more centralized environment?**

- **Are there best practices that can be applied to one or both?**

- **Personal: What is the ideal architecture model for your institution?**

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Part 3: Mapping to Business

Part 4: Leading

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Leading as an Architect

Jim Phelps
Enterprise Architect/IT Architect @ UW-Madison
Chair, ITANA.org
Chair, CIC IT Architects Group

IT Leaders Program
Tools & Resources

HOME • SCHEDULE & LOGISTICS • CONTACTS • ASSIGNMENTS • SESSION NOTES • TOOLS • STRATEGIC PROJECTS • SITE MAP • MOR HOME

"Leadership can be learned; in fact, it has to be learned. There are very few born leaders."

Peter Drucker

"Learning is defined as a change in behavior. You haven't learned a thing until you take action and use it."

Don Shula and Ken Blanchard

Please Note

This site is an approximation of the much more robust multi-group site available to all of the participants in the IT Leaders Program. Current and former participants include Stanford, MIT, Duke, Brown, Columbia, Penn State, the University of Texas, the University of Chicago, the University of Wisconsin, the University of Washington, and the University of California at Berkeley.

Program Overview

The IT Leaders Program has been designed to recognize the broader set of competencies that IT leaders need to be successful in the future. For a complete description of the program, including the rationale, design, and competencies covered in the program, please download ITLP-Overview.pdf (5.1MB).
(*This document was designed for two-sided printing.*)

http://www.morassociates.com/itlp.htm

	Management	Leadership
What	Order & Consistency · · · · · · · · · · · · · Plans & Budgets	Change & Evolution · · · · · · · · · · · · · Vision & Direction
How	Organize & Delegate · · · · · · · · · · · · · Measure & Adjust	Connect & Align · · · · · · · · · · · · · Motivate & Inspire

From Bill Clebsch - AVP for IT @ Stanford University

Be purposeful

Build relationships

Deliver results

An Architect is a
Leader

Leadership

Much of this content is from my MOR ITLP experience

"A leader's job is to make sure the organization does the right things while a manager's job is to make sure we do those things right."

Warren Bennis, *Why Leaders Fail*

"In doing adaptive work, the problem is often unclear and therefore the solution is unclear. Adaptive work is generally messy work that requires persistence, creativity and courage to work through."

Ronald Heifetz et al, "Political Leadership: Managing the Public's Problem Solving"

"The essence of leadership is found in the ability to transform vision into significant actions. The two dimensions are vision and ability to implement."

William Hitt, *The Leader Manager: Guidelines for Action*

"The only true leader is someone who has followers…who do the right things…Leaders are highly visible."

Peter Drucker

Leadership is…

Change & Evolution
. . . .
Vision & Direction
Connect & Align
. . . .
Motivate & Inspire
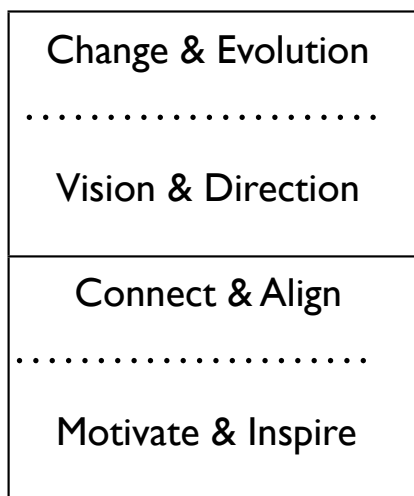
Leadership is...

1. Doing the right things
   (finding the strategic)

2. Solving adaptive problems

3. Transforming vision into
   action

4. Being visible, Building
   Followers

Leading: Creating the future

Managing: Operating the current

Doing: doing the task

Work Groups

Top 2 or 3 "Leading Activities"

Homework:

What tasks do you do that are:

Leading vs. Managing vs. Doing

What leading things should you do more of?

Leading: Creating the future

Be Purposeful:

Change & Evolution
. . . .
Vision & Direction
Connect & Align
. . . .
Motivate & Inspire

1. Doing the right things (finding the strategic)

2. Solving adaptive problems

3. Transforming vision into action

4. Being visible, Building Followers

Leadership

Competencies

Strategic Thinking

Change Management

Decision Making

Strategic Thinking

Strategic Partnerships

Change Management

Building Agreement

Change Management

Persuasion
&
Communication

Decision Making

Shared Leadership

Strategic Thinking

Change Management

Decision Making

Strategic Partnerships

Building Agreement

Persuasion & Communication

Shared Leadership

Work Groups

Competency Quiz

What are you strong in?

What one thing should you work on?

Homework:

What is a competency you should work on?

How will you build on that competency?

# But I'm not a leader...

I'm just a geek.

Geekwork: 12 Competencies

- Technical competence
- Personal productivity
- Juggle multiple tasks simultaneously
- Describe the business context of technical work
- Forge compromises between business and technical constraints
- Manage client relationships
- Manage technical teams
- Play positive politics
- Help expand client relationships
- Work through others, to make others productive
- Manage ambiguity
- Manage time horizons

Building Relationships

Influence

3 Powers
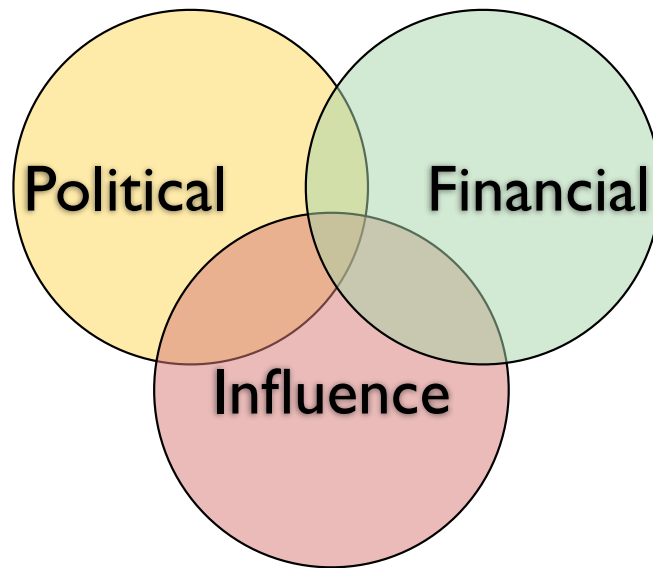
$$I + I + I + I$$

From MOR ITLP

Introduce

Inquire

Invest

Influence

From MOR ITLP

Managing

Myself

By

Walking Around

Work Groups

Where would you most like to influence?

Who would like to influence?

What is your strategy for getting there?

Homework:

Who would you most like to influence?

What is your strategy for getting there?

CREATE FUTURE VIABILITY

Establishing direction - doing the right things

Inspiring commitment - being visible

Transforming vision into action

Solving adaptive problems

For me....

Artifacts   *Relationships*

Be purposeful

Build relationships

Deliver results

Leading as an Architect

Leading, Managing and Doing

Building Competencies

Influencing People