



**EA@IST**  
ENTERPRISE ARCHITECTURE

# The Enterprise Architecture Initiative at Penn State

Brian H. Cameron, Ph.D.  
The College of Information Sciences  
& Technology  
The Pennsylvania State University

# IST College Overview

- Opened in 1999 and is the newest college at Penn State.
- Mission is to change the world with inspired solutions, humanized technologies, and informed people.
- 2,000 undergraduates
- 95% job placement rates
- Average starting salary is over \$57,000



# Information, Science & Technology

- **Information Sciences and Technology (IST) is the central science for the 21<sup>st</sup> century. It seeks to provide solutions to complex problems through a synthesis of the science and art concerned with people, information and technology.**
- Information is central to all fields of endeavor today:
  - Enterprise Informatics
  - Business-informatics
  - Medical-informatics
  - Legal-informatics
  - Bio-informatics
  - Enviro-informatics
  - Chemometrics

**X-Informatics**

# IST Enterprise Integration & Application Option

- Learn about how organizations work and how information technology can be used as strategic resources to support their innovation, mission-critical activities, and business functions.
- Topics covered include:
  - Enterprise systems
  - Middleware solutions
  - Value chain
  - Process modeling
  - Workflow analysis
  - Change management
- To succeed in the real world of enterprise IT consulting, students need to learn project management, teamwork, problem-solving, and presentation skills.

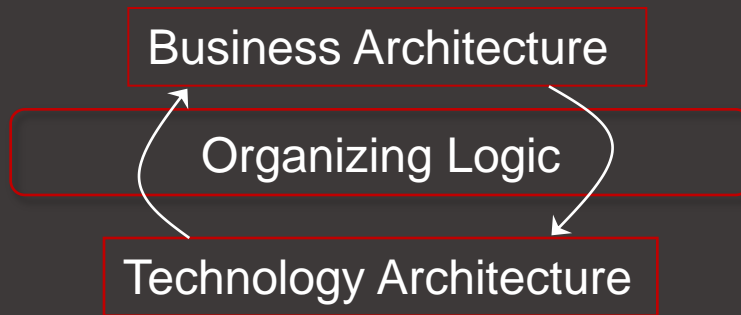


# IST Consulting Solutions Program

- Gain first-hand experience with student consulting teams and experience all the resources that IST has to offer.
  - Faculty-run student IT consulting teams
  - Organizations receive assistance with integration related projects
  - Students gain real world experience working with organizations and IT projects (experiential learning)
  - The program works closely with corporate, government, and education organizations to explore and develop innovative, win-win, partnerships and projects
  - This experiential learning model is the focus of a current NSF grant

# EA Initiative at the College of IST

## Enterprise Architecture



- Enterprise Architecture Advisory Board, over seventy organizations from seven countries
- First Advisory Board Meeting conducted September 2009

- Partnering with College of Business to create an undergraduate EA degree focus
- Developing an online Professional Masters Program
- Developing a Certificate Series for early career professionals
- Developing a Research Agenda and Research Center
- Faculty involved: B. Cameron (Director), S. Purao, S. Clark, E. Glantz

# How We Got Here

- College of IST's real-world/integration focus
- Involvement with The Association for Open Group Enterprise Architects (AOGEA), The Association for Enterprise Information (AFEI), and other industry associations
- Prior work with Gartner's EA Research Group
- Exploration of the EA Advisory Board

# Initial Organizations Involved

- Accenture
- AMR Research
- Applied Research Lab/  
Penn State
- Assoc. of Open Group  
Enterprise Architects  
(AOGEA)
- Association for  
Enterprise Integration
- BAE Systems Inc
- Binary Group
- Boeing
- Booz & Allen Hamilton
- Broadridge
- Burton Group
- Business Architecture  
Society
- Capgemini
- Center for the  
Advancement of the  
Enterprise Architecture  
Profession (CAEAP)
- Computer Aid Inc.  
(CAI)
- Computer Sciences  
Corporation
- EMC Corporation
- Ernst & Young
- Forrester Research
- Gartner
- GEICO
- IBM
- Integration Consortium
- International Standards  
Org. (ISO)
- Lockheed Martin
- Microsoft Corporation
- National Defense  
University
- National Institute of  
Standards and  
Technology (NIST)
- Network's Edge  
Consulting
- Northrop Grumman
- Object Management  
Group (OMG)
- Oracle
- PA. State System of  
Higher Education  
(PASSHE)
- Penn State University
- Pfizer
- Pinnacle Business  
Group
- Pitney Bowes
- PNC Financial Services  
Group
- PricewaterhouseCoopers
- Radboud University  
Nijmegen
- Raytheon
- SAP AG
- Siemens
- State Farm Insurance  
Company
- TATA Consultancy  
Services
- The Confluence Group
- The MITRE Corporation
- The Open Group
- The Open Group  
Architecture Forum
- U.S. Air Force
- U.S. Department of  
Defense
- U.S. Department of  
Interior
- U.S. General Services  
Administration (GSA)
- U.S. Office of  
Management and  
Budget (OMB)
- U.S. Air Force, Chief,  
Enterprise Architecture  
Division, Office of  
Warfighting Integration  
and CIO
- Unisys
- Verizon Telecom -  
Information Systems
- Walt Disney Studios
- Wipro Technologies
- World Wide Web  
Consortium (W3C)

# Four Main Areas of the EA initiative

The Enterprise Architecture Advisory Group at Information Science and Technology is organized into four working groups which are explained below:

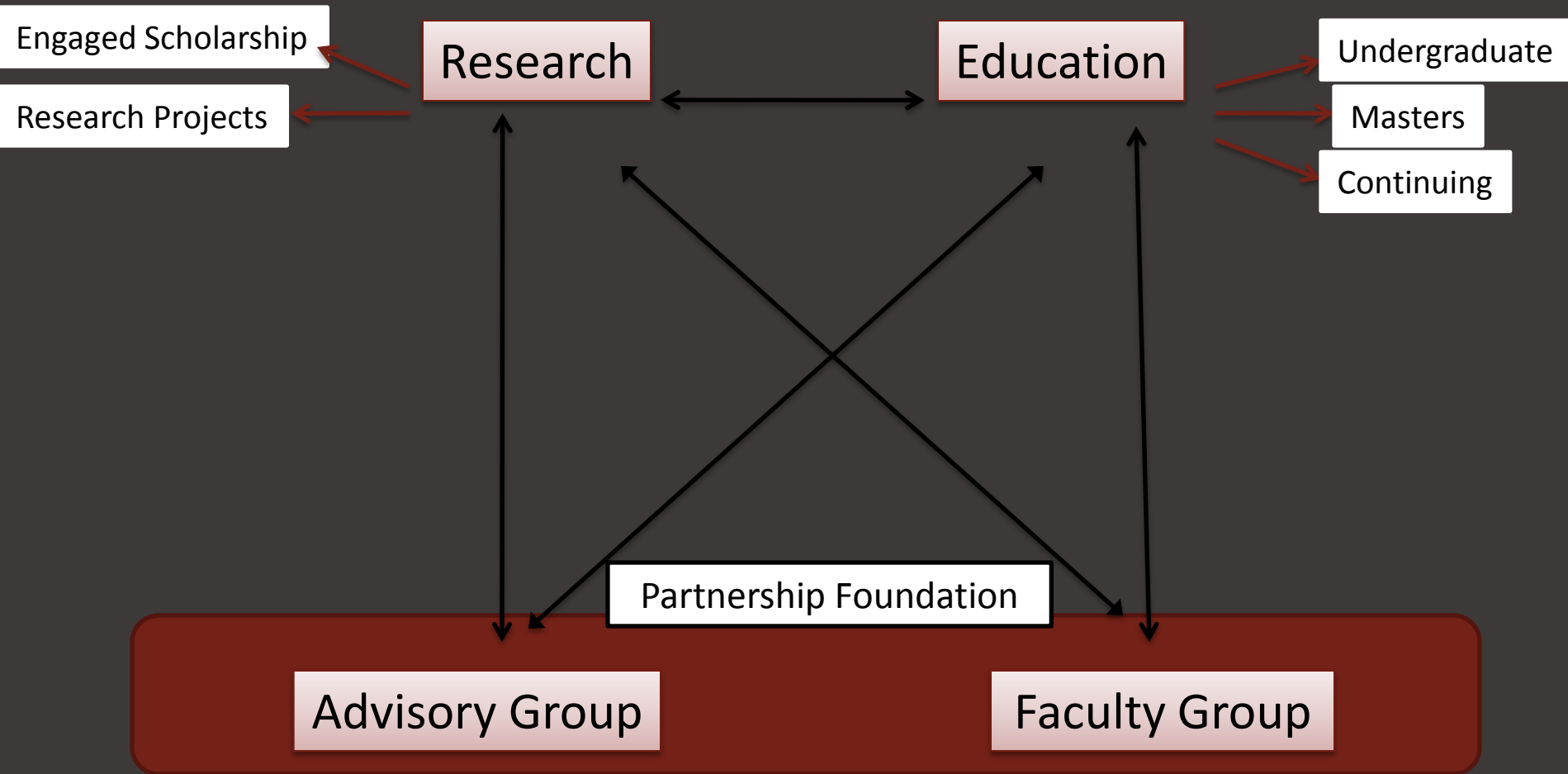
**The Undergraduate Education committee** has been working to define the competencies that an undergraduate student graduating with a degree in Enterprise Architecture should possess.

**The Masters Education committee** has working to define what competencies we should be building in the Enterprise Architecture track within our new online professional masters program.

**The Professional Development committee** has been working to define what type of continuing education offering we should be developing in the area of enterprise architecture. These offerings could include certificate programs, executive education, and customized programs for specific organizations.

**The Research committee** has been working to define what research streams we should be developing and enhancing related to Enterprise Architecture. This committee also helped to develop a straw man participation model for the new EA Center.

# The Enterprise Architecture Center



# Major Goals for the Coming Year

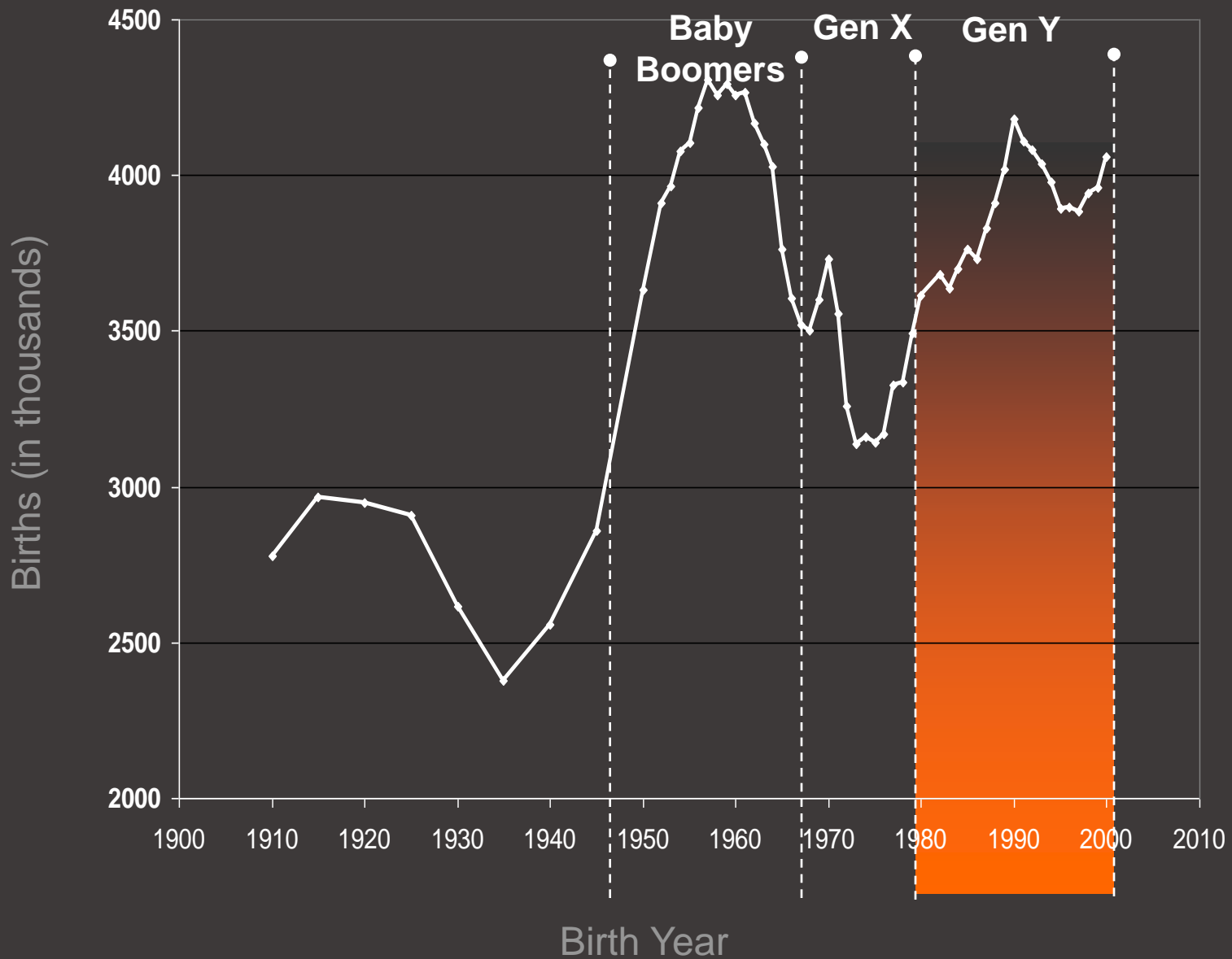
- **Launch of the online Professional Masters in EA**
- **Launch of the undergraduate focus in EA**
- **Launch of the Center for Enterprise Architecture**
- **Continue to develop and expand this unique EA community**

# Development Challenges

---

- **Masters Curriculum**
- **Undergraduate Curriculum**
- **Understanding Generation Y**

There are over **70 million people** in the US belonging to Generation Y.



Generation Y is currently ~ **25%**  
of the **US workforce**, and is projected to  
be ~ **47%** of the **US workforce** by **2014**.

youTube Google Daily Show  
iTunes eBay SpaceShipOne CD's  
Columbia Accident **The 2000 Election Crisis**  
Columbine **Internet** Southpark  
Amazon.com Starbucks  
**Gen Y Formative Events**  
9-11 Terrorism mac vs. pc Gaming Simpsons  
abu ghraib Reality TV  
Technology Blogging Challenger Accident  
Online Shopping Franchises  
Napster **Cable** **The Iraq War** MTV  
Celebrity Scandals Oprah  
Global Warming

Many describe this **generation** as:

# a generation that is individualistic

Generation Y is more individualistic than earlier generations and seeks autonomy in their opinions and behavior.

# a generation that is team-oriented

Many in Generation Y enjoy working in groups where they can share their ideas and talents.

# a generation that is confident

Generation Y was raised with advice such as “anything is possible”, to “follow your dreams”, to “be what you want to be”, to “pursue happiness,” and to “just be yourselves.”

# a generation that is ambitious

... and ambitions grow stronger for those that attend college. Technical excellence is a starting point and is inherently assumed.

# a generation that is **expecting**

Expectations arise from absorbing the culture and environment around them. Many have high expectations for salary, job flexibility, lifestyle, technology, and the future.

# a generation that is open

Generation Y is more willing to share feelings and personal information.  
Opportunity linked to willingness to share online.

# a generation that is **direct**

Generation Y will give and expect honest feedback.

# a generation that is empowered

Generation Y was encouraged to pursue happiness, follow their dreams, and embrace individuality. They have a strong sense of responsibility.

# a generation that is **wired & wireless**

Generation Y enjoys the convenience of communicating electronically and wirelessly. Yet, many are equally concerned about privacy.

# a generation that is **global**

Generation Y grew up in and interacts with a world that is connected, accessible, interactive and open.

# a generation that is independent

For many, childhood filled with instability, unpredictability, and uncertainty. Many do not have an expectation for lifetime employment.

# a generation that is information rich

Many get bored or frustrated if the information flow is poor or too slow.  
Continuous partial attention and multi-tasking may be a result.

# a generation that is impatient

Many raised in an environment and conditioned for “instant gratification.”  
Sometimes unrealistically so.

# a generation that is **adaptable**

Generation Y is quick to cope with complexity and can adjust accordingly.

# a generation that is diverse

Generation Y is a diverse group in many ways including race, religion, and lifestyle.

# Expectations for the work environment:

Being valued and engaged

Appreciate open communication and feedback

Value diversity and globalization

Flexible, informal, decentralized work environments

Like team atmospheres

Measured on results, not time spent on the job

Follow leaders based on credibility

Not necessarily afraid of losing their job

Like to learn by hands-on opportunities

Openly talk about career paths and options

Desire the workplace to be fun

# Questions/Discussion

