E-Authentication

…*in Student Aid*…

Can it:

- *Deliver Service?*
- *Provide Value?*
- *Achieve Results?*

Electronic Access Conference
Orlando, Florida
Las Vegas, Nevada
2004

Agenda
...the State of E-Authentication...

Definitions / Terminology / Standards	*Mike Sessa, PESC*
FSA Update and Perspective	*Charlie Coleman, FSA*
Industry Perspective	*Charles Miller, RIHEAA*
School Perspective	*Nicholas Zinser, Northeastern University*

Discussion…what does E-Authentication mean for all of us…???…

Definitions / Terminology / Standards

Michael Sessa

Definitions and Terminology

- Authentication – is the process of identifying an individual*.
- Authorization – is the process of giving individuals access based on their identity (once they have been authenticated).
- Identity – is a unique name of a person, device, or the combination of both that is recognized by a system.
- Security – is a process or technique to ensure that data stored cannot be read or compromised by any individuals without authorization.

Definitions and Terminology

- Privacy – is freedom from unauthorized access.
- Trust – is firm reliance on integrity, ability, or character.
- Federated Identity – use of agreements, standards, and technologies, to make identity and entitlements portable across loosely coupled, autonomous identity domains. (Burton Group 8/30/04)
- Transitive Trust – circle of trust, multi-domain single sign-on.

  A trusts B. B trusts C. A trusts C.

The Business Problem in Higher Education

- Students must access multiple online systems and service providers that are not connected or related.
- Different access requirements are burdensome and confusing.
- Students circumvent security provisions by using the same passwords and/or passwords are left in the open and are unsecured.

A Look at the ATM Model

- Provide access to funds from multiple locations using combination of token and PIN.
- Available, simple to use, a customer convenience, a commodity.
- BUT, the ATM network had to be built. Policies, procedures, network, and rules of engagement had to be developed and agreed upon by a significant number of banks.
- Banks are not required to have ATMs.
- Customer experience and standards have set the ATM process.

Guiding Market and Consumer Principles

- Students must be able to access necessary information whenever needed.
- Process must be simple, easy, and must be market and user acceptable.
- Process must protect privacy.
- Students will access higher education services through any of the suppliers that are servicing them…multiple “starting points.”

Guiding Market and Consumer Principles

- Process must not rely on one specific technology.
- Process must support multiple schemes (SAML, Liberty, Shibb).
- Process must be secure and reliable.

The Federal Perspective

www.CIO.gov/eAuthentication

- OMB Guidance December 16, 2003 (M-0404) for Government Paperwork Elimination Act of 1998 and E-Government Act.
  - Assists agencies in determining their authentication needs for electronic transactions.
  - Directs agencies to conduct e-authentication risk assessments on electronic transactions to ensure that there is a consistent approach across government.
  - Provides the public with clearly understood criteria for access to Federal government services online.

The Federal Perspective

Four Assurance Levels:

- Level 1 – Little or no confidence in the asserted identity's validity.
- Level 2 – Some confidence in the asserted identity's validity.
- Level 3 – High confidence in the asserted identity's validity.
- Level 4 – Very high confidence in the asserted identity's validity.

The Federal Perspective

- NIST Special Publication 800-63 January 2004 – states specific technical requirements for each of the four levels of assurance:
  - Identity proofing, registration, and delivery of credentials.
  - Tokens for proving identity.
  - Remote authentication mechanisms (credentials, tokens, and protocols used to establish that a claimant is in fact the subscriber claimed to be).
  - Assertion mechanisms used to communicate the results of a remote authentication to other parties.

The Federal Perspective

Burton Group Report

- An independent program review of technical architecture, interoperability, and trust characteristics
- EAP
- Available through www.CIO.gov/eAuthentication

Electronic Authentication Partnership (EAP)

www.EAPartnership.com

- Formed by CSIS, OMB, and GSA.
- EAP is "the multi-industry partnership working on the vital task of enabling interoperability among public and private electronic authentication systems."
- Bylaws – finalized September 2004.
- Business Rules and Processes – October 2004.
- Interoperability Report – October 2004.

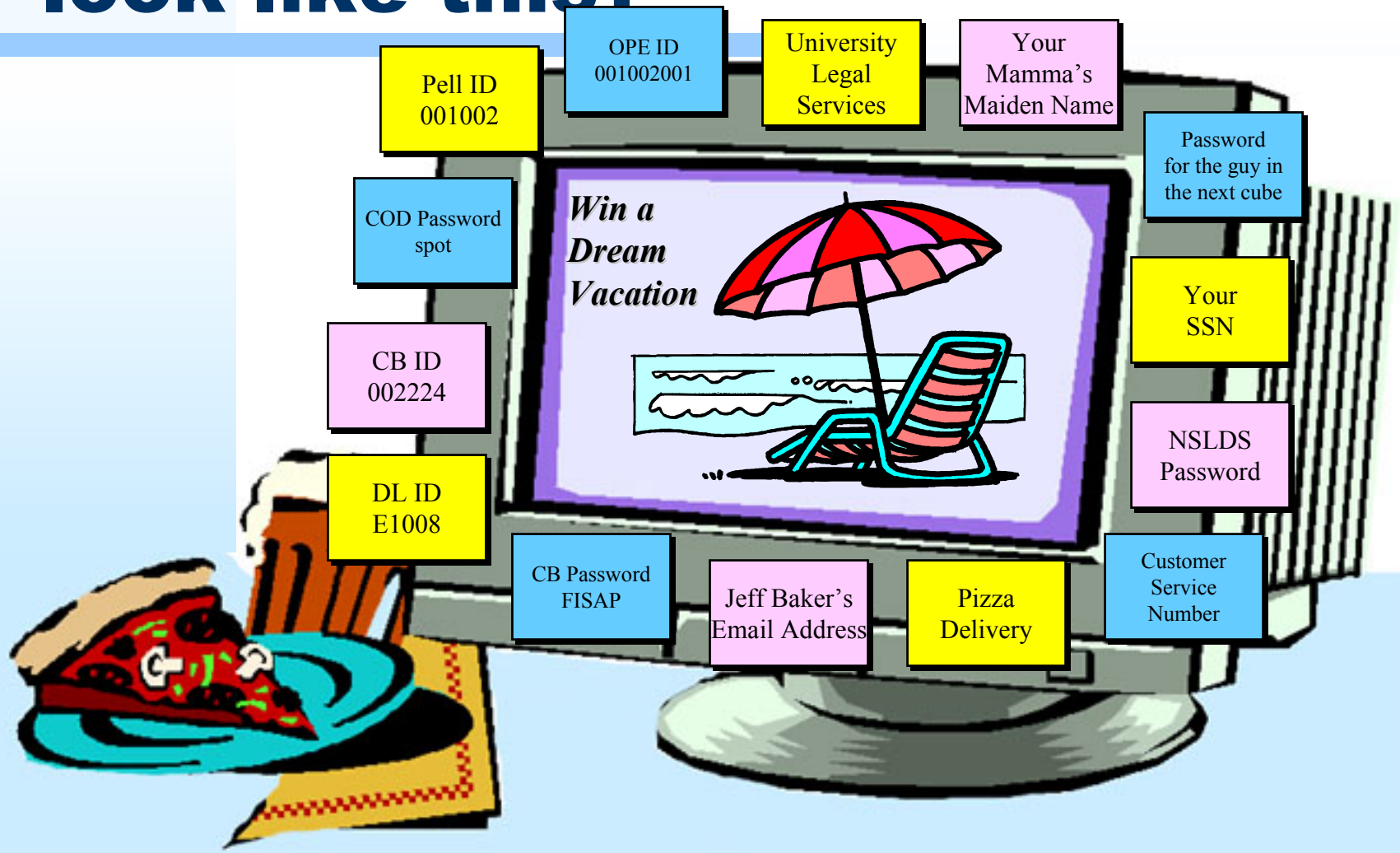
What's needed?

- Standard policies, procedures, and rules.
- Electronic standards.
- Agreement from service providers to engage in a circle of trust.
- Awareness, communication, and collaboration.
- Market and consumer satisfaction.

FSA Update and Perspective

Charlie Coleman

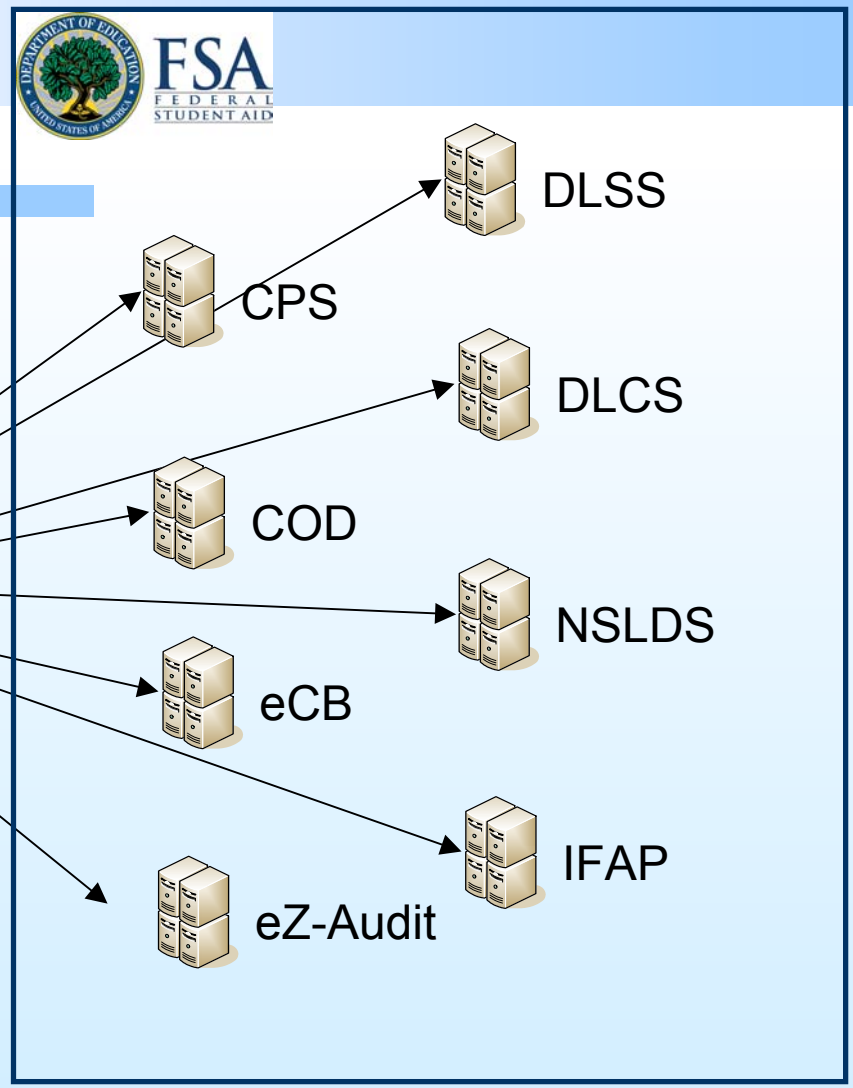
Does your workstation look like this?



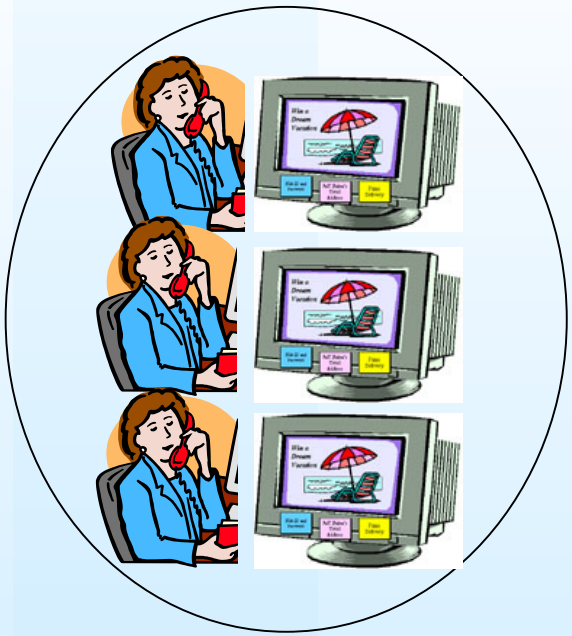
Today…

Financial Aid Office

(Multiple User IDs & Passwords per FAA)



Future...



Financial Aid Office

(Fewer User IDs & Passwords per FAA)

FSA FEDERAL STUDENT AID

Authentication & Access Management

CPS

DLSS

DLCS

COD

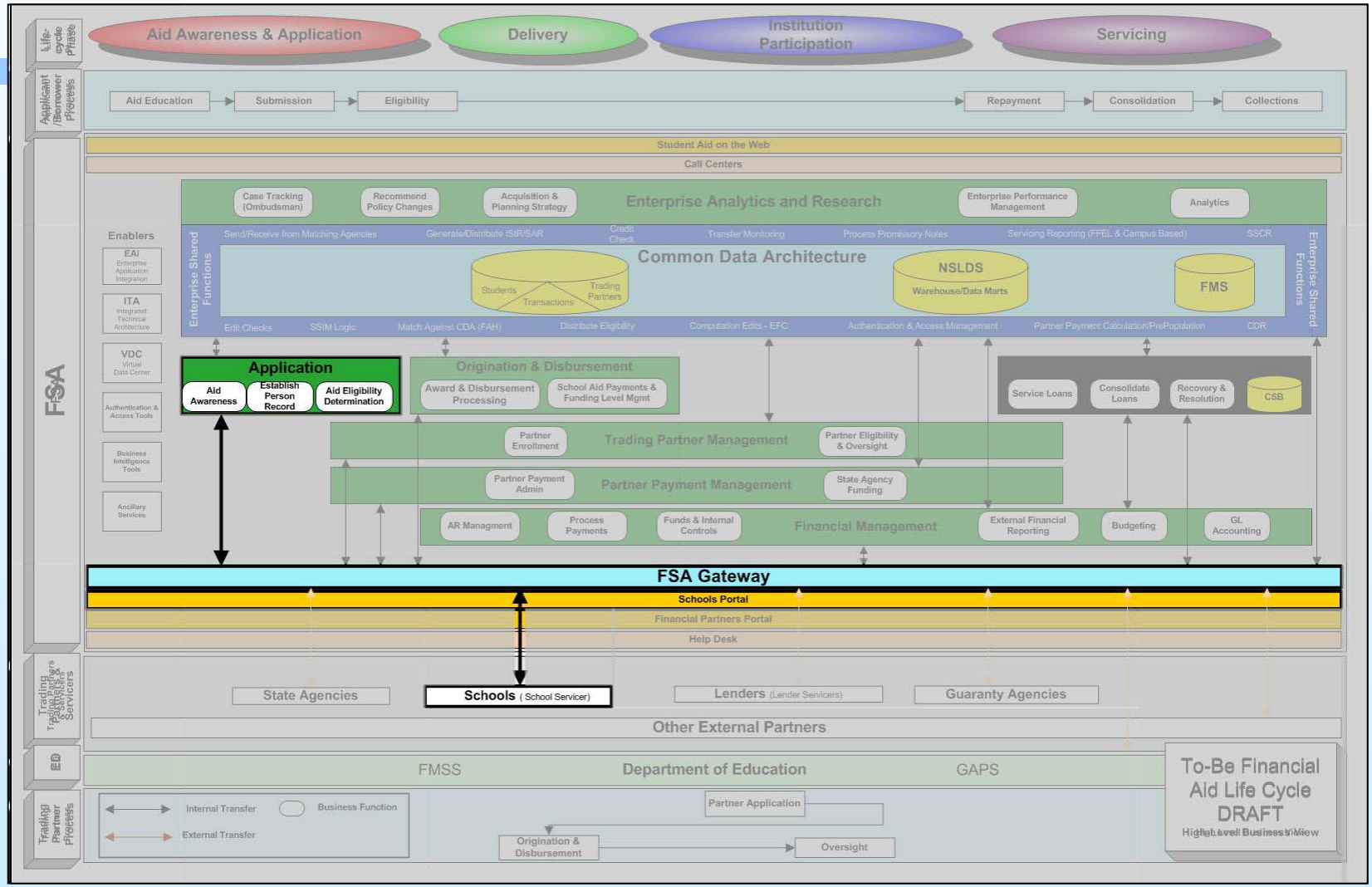
NSLDS

eCB

IFAP

eZ-Audit

Target Vision



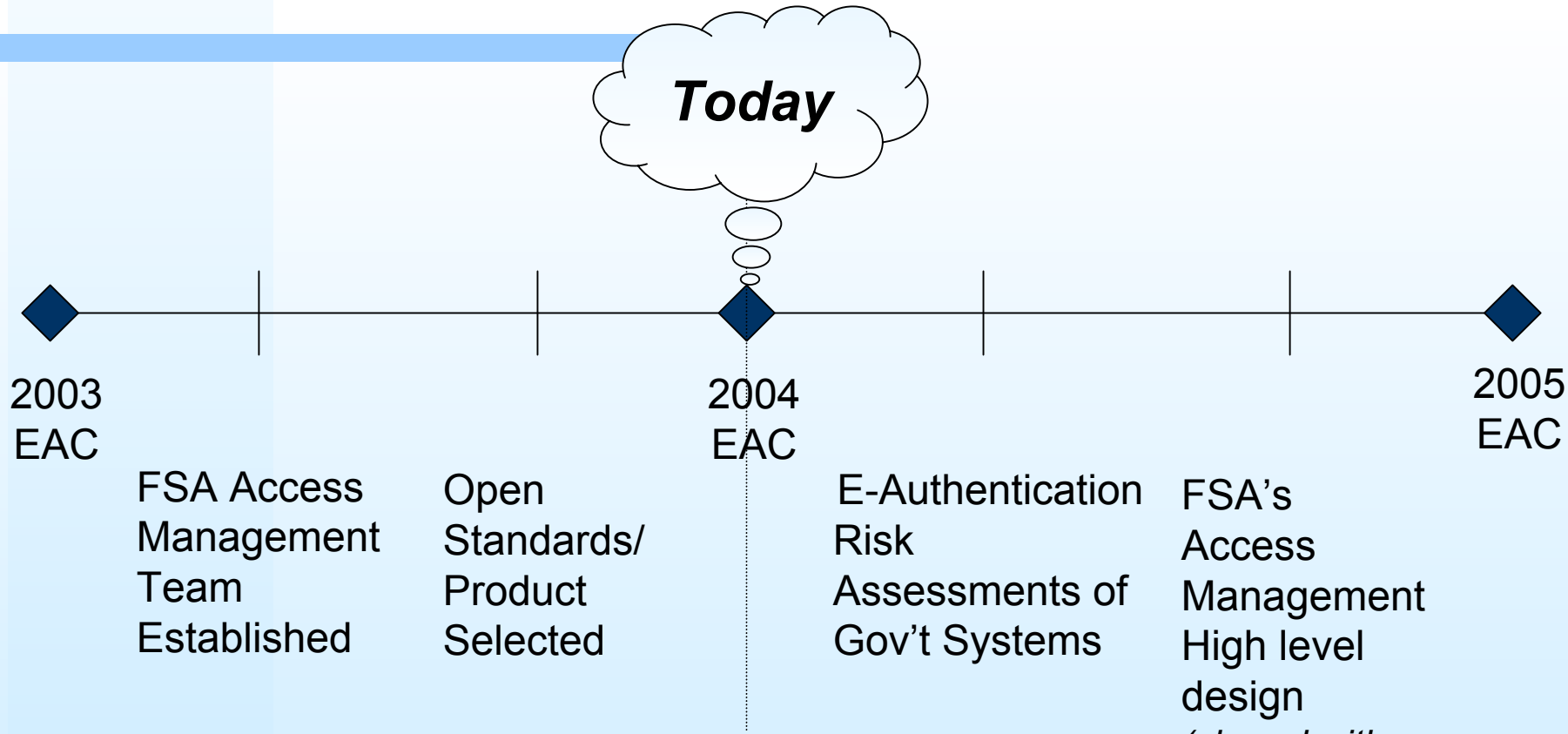
Why Are We All Working on These Issues…our Business Reasons…

#1 …Meets customers expectations for simplified web access

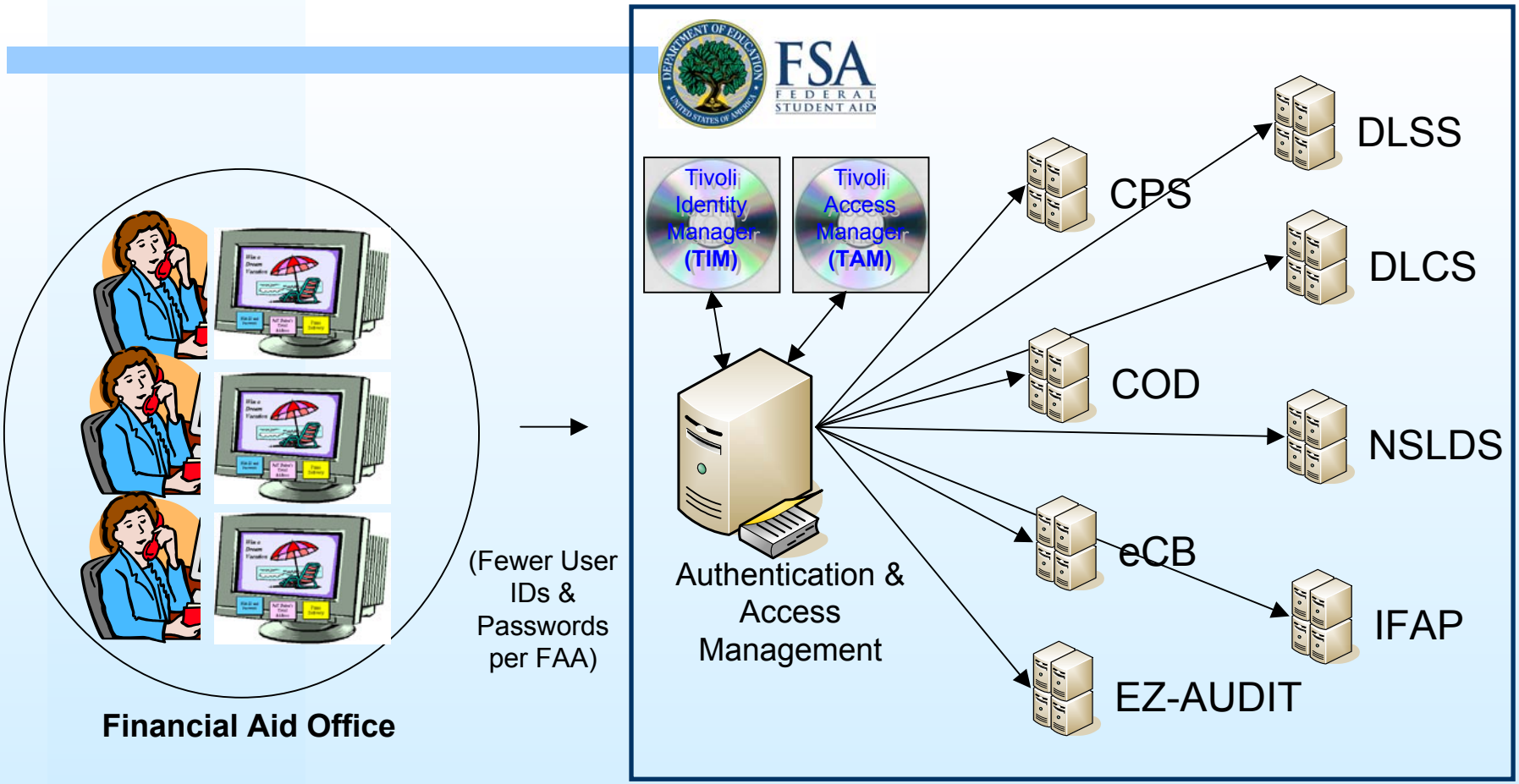
#2 …Improves the security / privacy of student aid data with fewer IDs and simpler management

#3 …Reduces costs to FSA, schools, etc

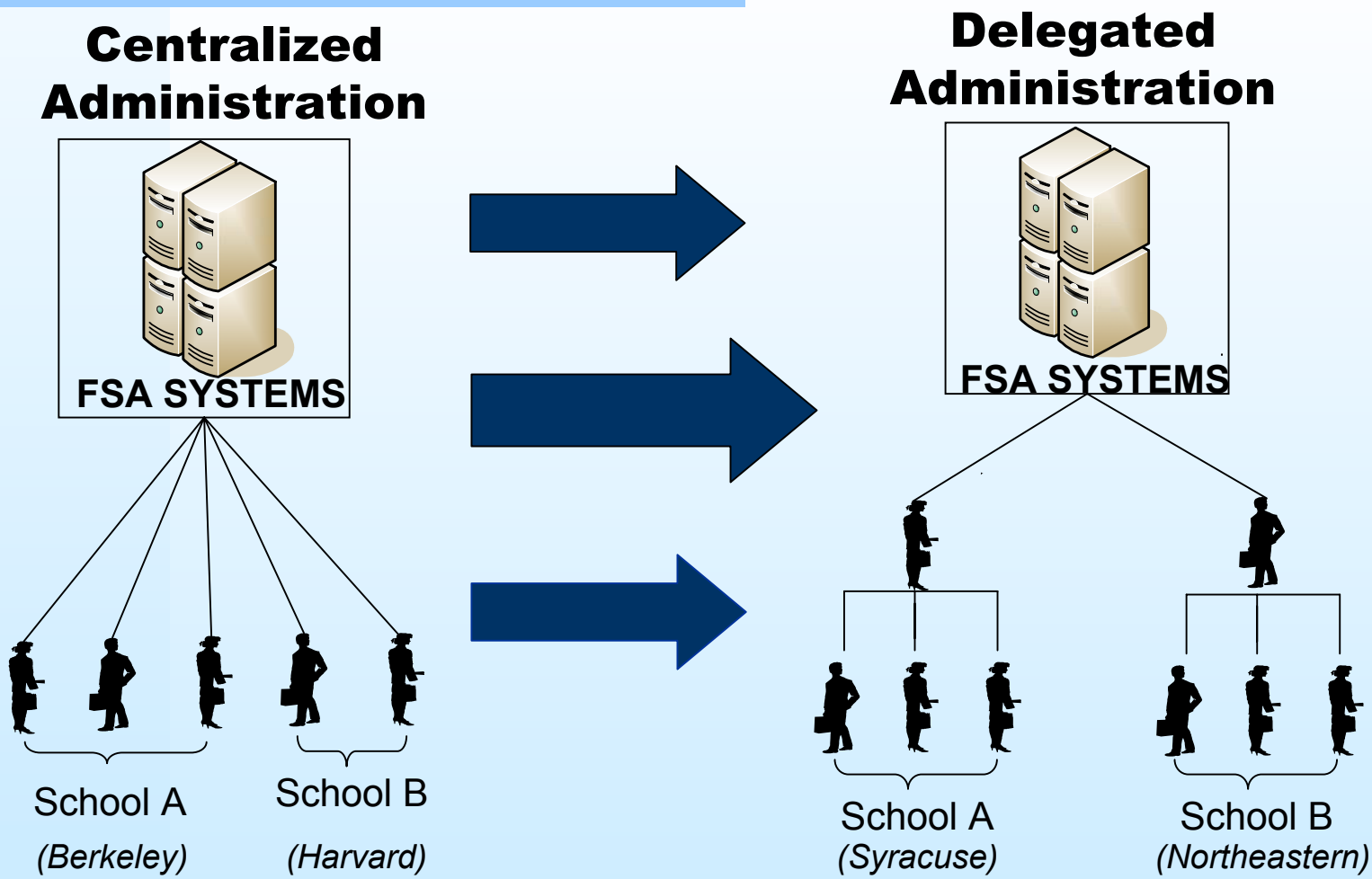
Then…Now…Next



Standards & Products



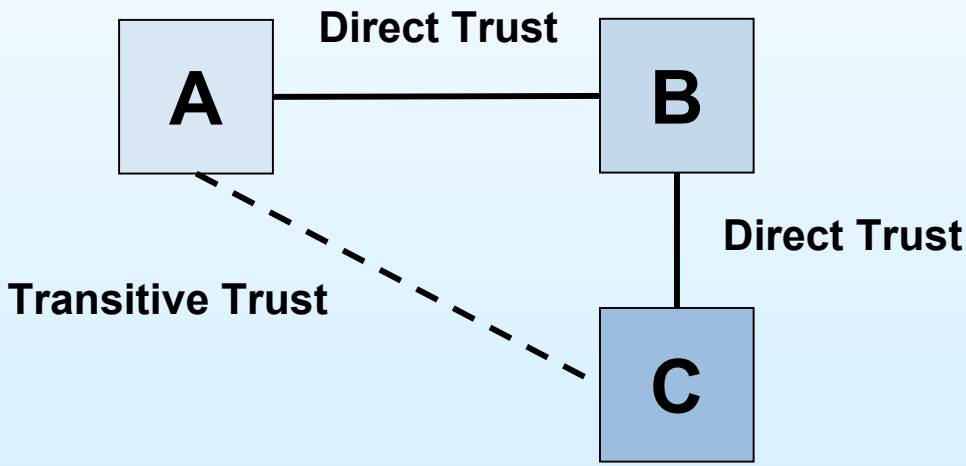
Moving to Self Service Access…



Transitive Trust / Federated Identity

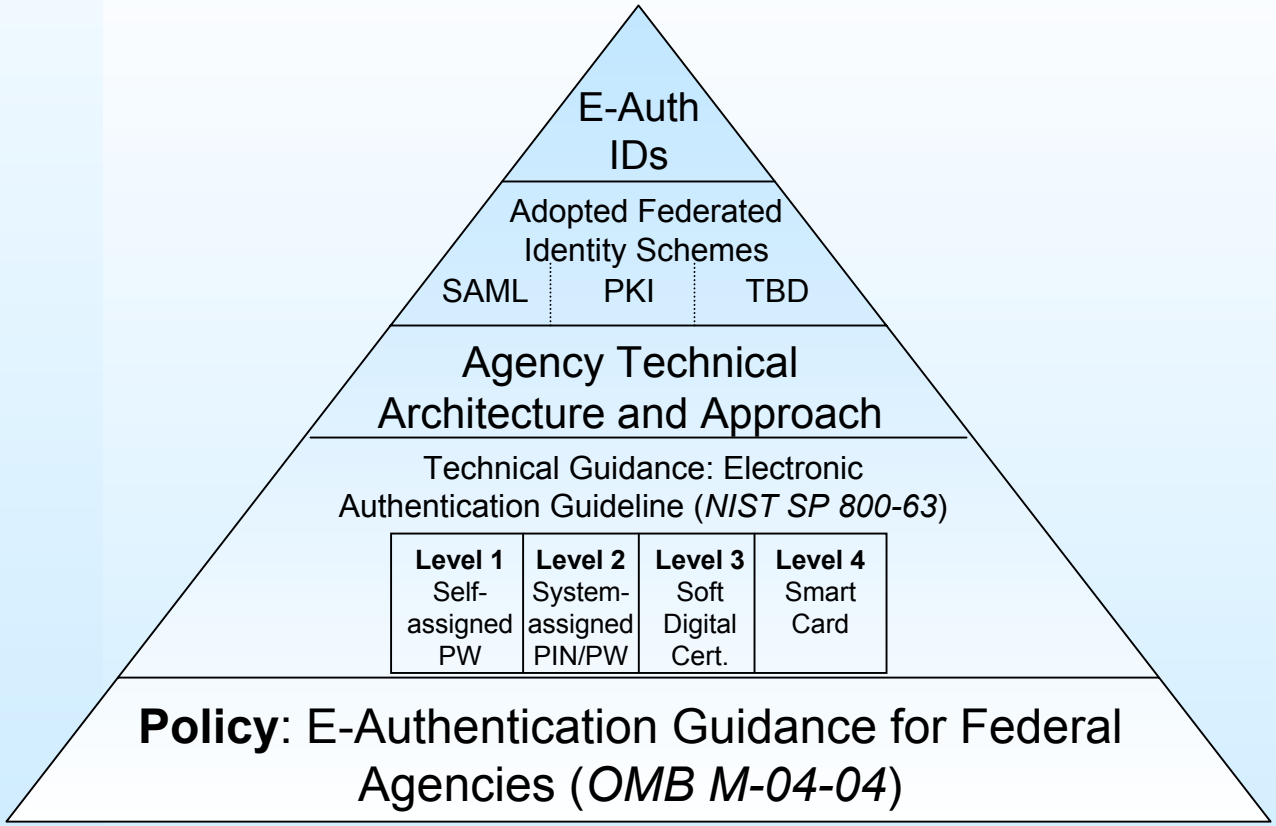
#1 *Transitive Trust* and *Federated Identity*…the practice of accepting a third-party identity based on mutual consent between two direct parties.

#2 The concept looks like:



#3 FSA plans to participate…not lead

Federal E-Authentication Framework Initiative



Documents and information at: www.cio.gov/eauthentication

In Summary FSA is…

#1 …moving forward with the Access Management Team.

#2 …testing Tivoli Identity Manager (TIM) and Tivoli Access Manager (TAM) as open standard products.

#3 …moving to a ‘Delegated Administration’ model.

#4 …participating in the Transitive Trust discussions…not leading.

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Remember…

…What Happens in Vegas, Stays in Vegas…

Industry Perspective

Charles Miller

Overview of Authentication

- Simple example of authentication and transitive trust using SAML.
- Industry initiative that is using transitive trust with SAML. (Meteor)
- How it works.
- Future transitive trust possibilities.

E-Authentication Objectives

- Provide a flexible, easy to implement authentication system that meets the needs of your organization and your clients.
- Ensure compliance with the Gramm-Leach-Bliley Act (GLBA), federal guidelines, and applicable state privacy laws.

E-Authentication Objectives

- Assure data owners that only appropriately authenticated end users have access to data.
- Ensure compliance to internal security and privacy guidelines.

Requirements for Secure e-Authentication

- User must be required to provide an ID and a shared secret.
- Assignment and delivery of shared secret must be secure.
- Assignment of shared secret is based on validated information.
- Reasonable assurances that the storage of the IDs shared secrets are secure.

Secure E-Authentication Process

- End user authenticates at member site
- Member creates authentication assertion (SAML)
- Member signs authentication assertion with digital certificate (XML Signature)
- Control is passed to partner site

Simple Example of Transitive Trust & E-authentication

Your schools Library

Don't have that book. Try my partner, ACME Library

2

3

Sign On

1

I need a book for my class

4

Mr. SAML says you're ok

I have that Book

ACME Library

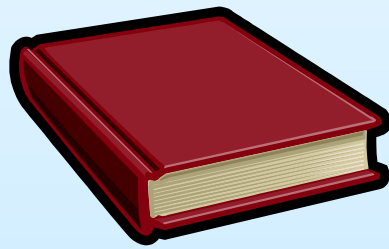
7

6

You can trust me! (SAML)

5

8

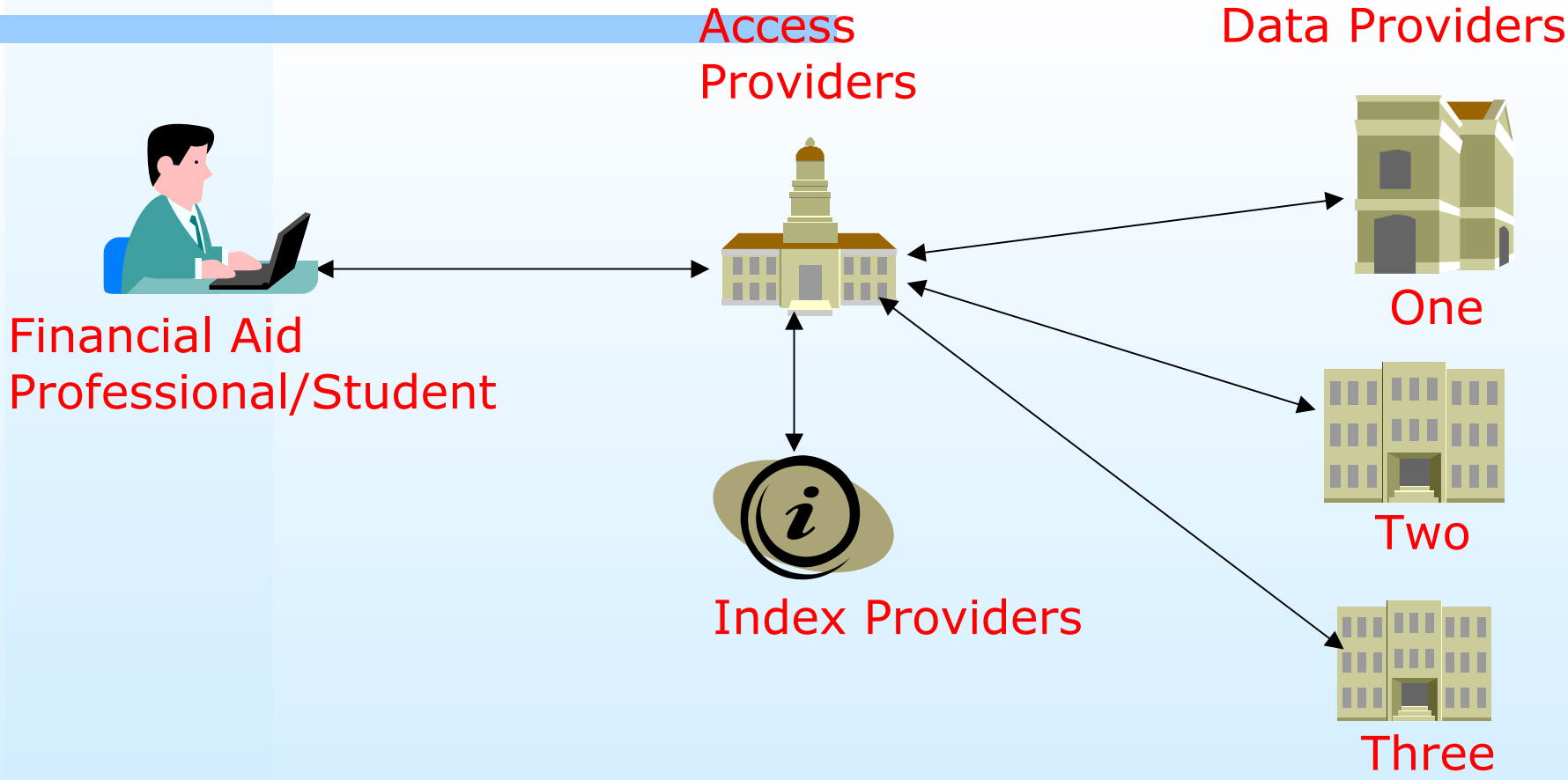


Checked out book from From ACME Library

Industry Example – Meteor

- Web-based universal access channel for financial aid information
- Aggregated information to assist the FAP with counseling borrowers and with the aid process in general
- Collaborative effort
- A gift to schools and borrowers

The Meteor Process



Security Assertion Markup Language (SAML)

- SAML defines an XML framework for exchanging security information and attributes.
- SAML communicates this information in the form of Assertions.
  - Assertions contain information about subjects (people or computers) which have an identity in the network.
  - Assertions are issued by SAML authorities - authentication authorities, attribute authorities, and policy decision points.

SAML Assertions

- Authentication
  - Previous authentication acts
  - Assertions should not usually contain passwords
- Attributes
  - Profile information
  - Preference information
- Authorization
  - Given the attributes, should access be allowed?

Typical Assertion

- Issuer ID and issuance timestamp
- Assertion ID
- Subject
- Name and security domain
- Conditions under which the assertion is valid
- Assertion validity period
- Audience restrictions
- Target restrictions (intended URLs for the assertion)
- Application specific conditions

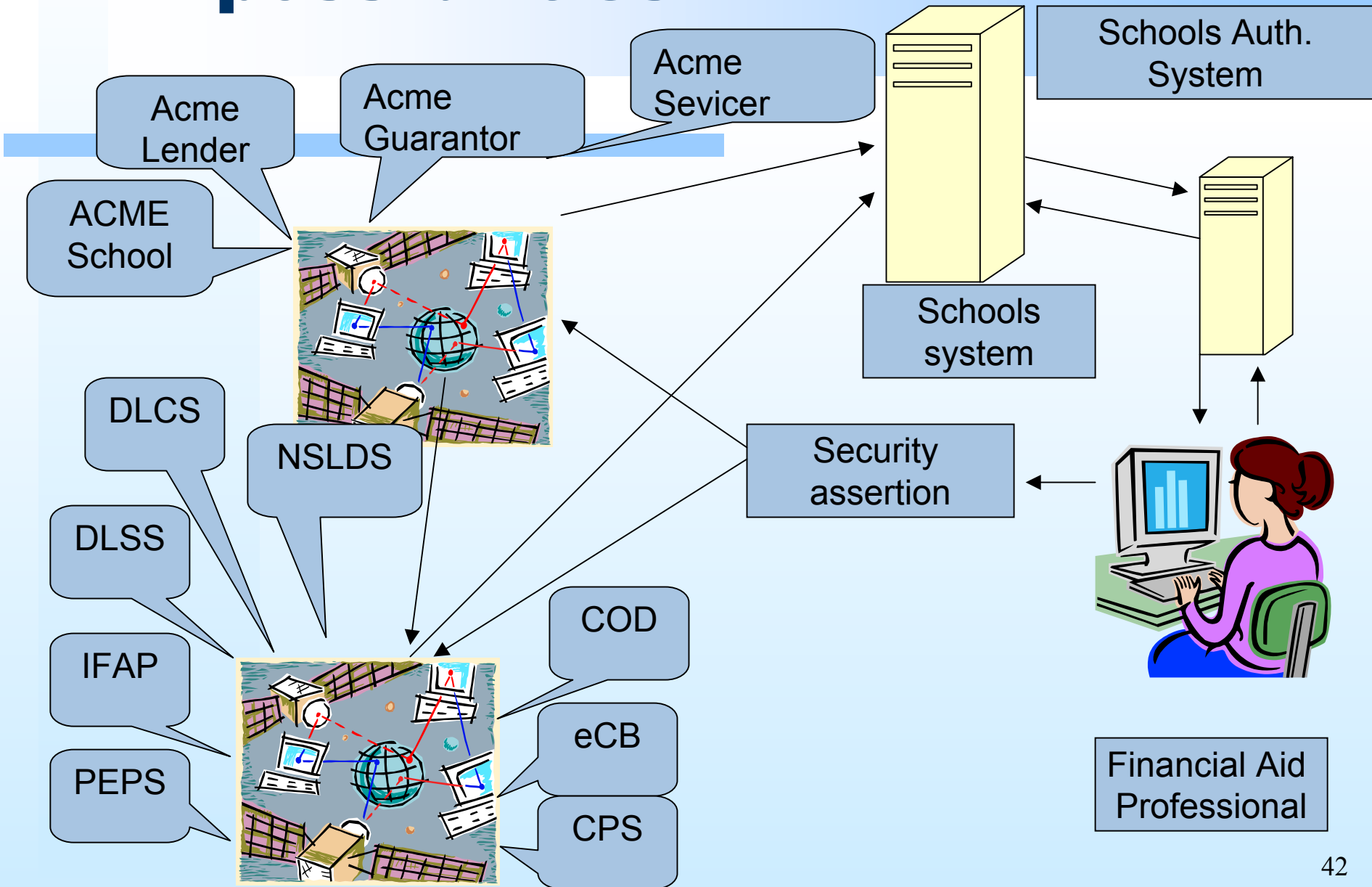
Additional Assertion Attributes

- Role of end user
- Social Security Number
- Authentication Process ID
- Level of Assurance
- Opaque ID

Securing SAML Assertions with XML Signatures

- The SAML assertion is signed by the entity that created it.
- When signed, all irrelevant white-space is removed.
- Once signed, the document may not be modified without invalidating the XML signature.

Future transitive trust possibilities.



School Perspective

Nicholas Zinser

Northeastern & myNEU

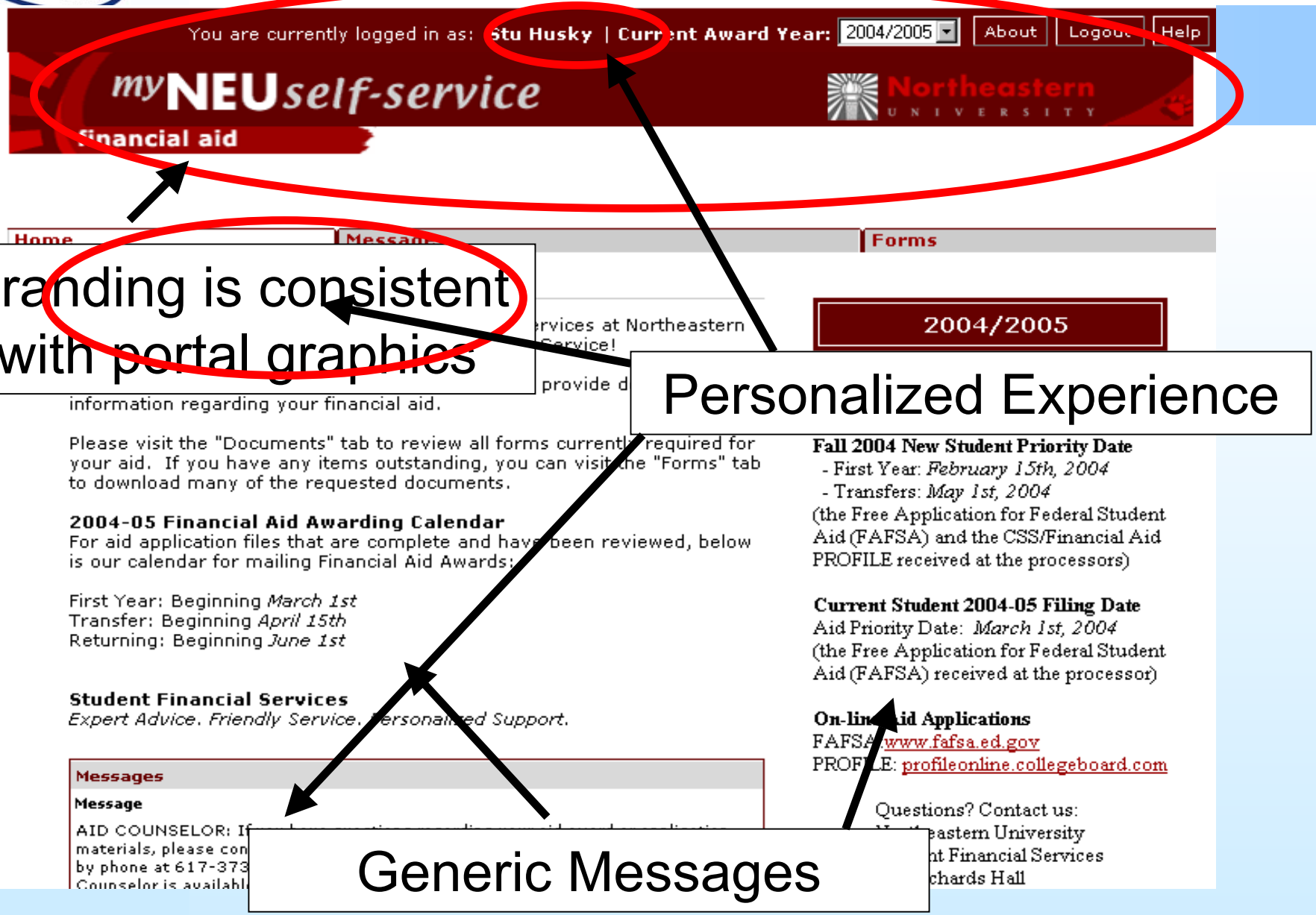
- Launched myNEU in Fall of 2002 to current student population
- Expanded to include admitted full-time undergraduate students in January 2004
- Quickly becoming the hub of student transaction activity

myNEU & Student Financial Services

- Launched real-time financial aid information site in January 2004
  - Authenticated via myNEU
  - Office available when students are
- Launched job search, application, and timesheet program in July 2004
  - Authenticated via myNEU
  - Increased service to students

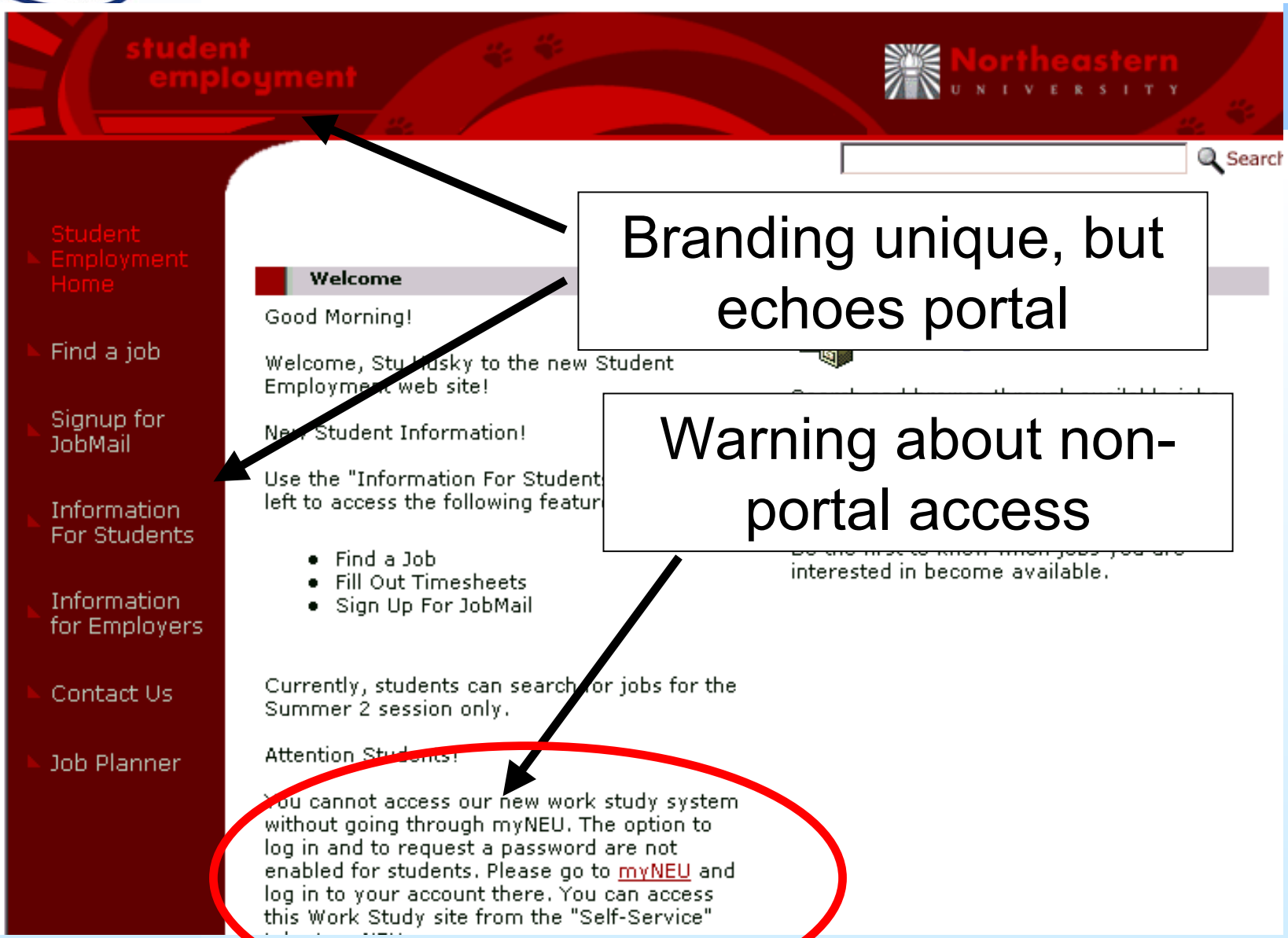
myNEU & Student Financial Services – Online Aid Information

- First implementation of a .NET product at Northeastern
- Had to merge portal user authentication with aid database identifiers
- Update scheduling poses the question – When do you take down the Internet?


You are currently logged in as: Stu Husky | Current Award Year: 2004/2005
About
Logout
Help
myNEUself-service
Northeastern University
Financial aid
Home
Forms
2004/2005
Branding is consistent with portal graphics
Personalized Experience
Generic Messages
information regarding your financial aid.
Please visit the "Documents" tab to review all forms currently required for your aid. If you have any items outstanding, you can visit the "Forms" tab to download many of the requested documents.
2004-05 Financial Aid Awarding Calendar
For aid application files that are complete and have been reviewed, below is our calendar for mailing Financial Aid Awards:
First Year: Beginning March 1st
Transfer: Beginning April 15th
Returning: Beginning June 1st
Student Financial Services
Expert Advice. Friendly Service. Personalized Support.
Messages
Message
Fall 2004 New Student Priority Date
- First Year: February 15th, 2004
- Transfers: May 1st, 2004
(the Free Application for Federal Student Aid (FAFSA) and the CSS/Financial Aid PROFILE received at the processors)
Current Student 2004-05 Filing Date
Aid Priority Date: March 1st, 2004
(the Free Application for Federal Student Aid (FAFSA) received at the processor)
On-line Aid Applications
FAFSA: www.fafsa.ed.gov
PROFILE: profileonline.collegeboard.com
Questions? Contact us:

myNEU & Student Financial Services – Jobs in the Portal

- New FWS system required knowledge of both students and supervisors
  - Students authenticated by the portal prevent non-NU students from applying for jobs
  - Supervisors need a non-portal method of managing their jobs as some employers are not NU employees



Branding unique, but echoes portal

Warning about non-portal access

Authentication Issues

- Namespace
  - As the University expands, available names in standard naming convention decreases
  - Flexibility allows for differentiation
    - husky.n
    - husky.nu
    - husky.northeastern
  - Central data warehouse for IDs created

Authentication Issues

- Technology
  - New products arriving to market are written in newer, constantly changing code
  - Several implementations have been the first of their kind at NU
  - Constant communication with IS staff and outside vendors is important

Other Authentication Initiatives

- Meteor access for students
  - Track loan borrowing information throughout academic program
  - Continued focus through alumni portal post-graduation
- Federal Perkins Loan MPN
  - Complete via the portal
  - Increase completion rate for MPN

…Thank You…Thank You Very Much…

…Questions / Comments / Thoughts…

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Contact Info

Michael Sessa
202-293-7383 (o)
617-694-2716 (c)
sessa@pesc.org

Charlie Coleman
202-377-3512 (o)
202-549-9955 (c)
charlie.coleman@ed.gov

Charles Miller
401-736-1100 (o)
cmiller@riheaa.org

Nicholas Zinser
617-373-5830 (o)
n.zinser@neu.edu
http://www.myneu.neu.edu/