

IAM Online

An Overview of Identity Management in Higher Education, 2011

Wednesday, July 13, 2011 – 3 p.m. ET

Mark Sheehan, EDUCAUSE Center for Applied Research (ECAR)

Please note: you will not hear any audio until the session begins

**An Overview of
*Identity Management in Higher
Education, 2011***

Mark Sheehan

July 2011

EDUCAUSE 2011 STUDY OF IDENTITY MANAGEMENT

Authors: Mark Sheehan and Cedric Bennett, with Pam Arroway, Susan Grajek, Judith Pirani, and Ronald Yanosky

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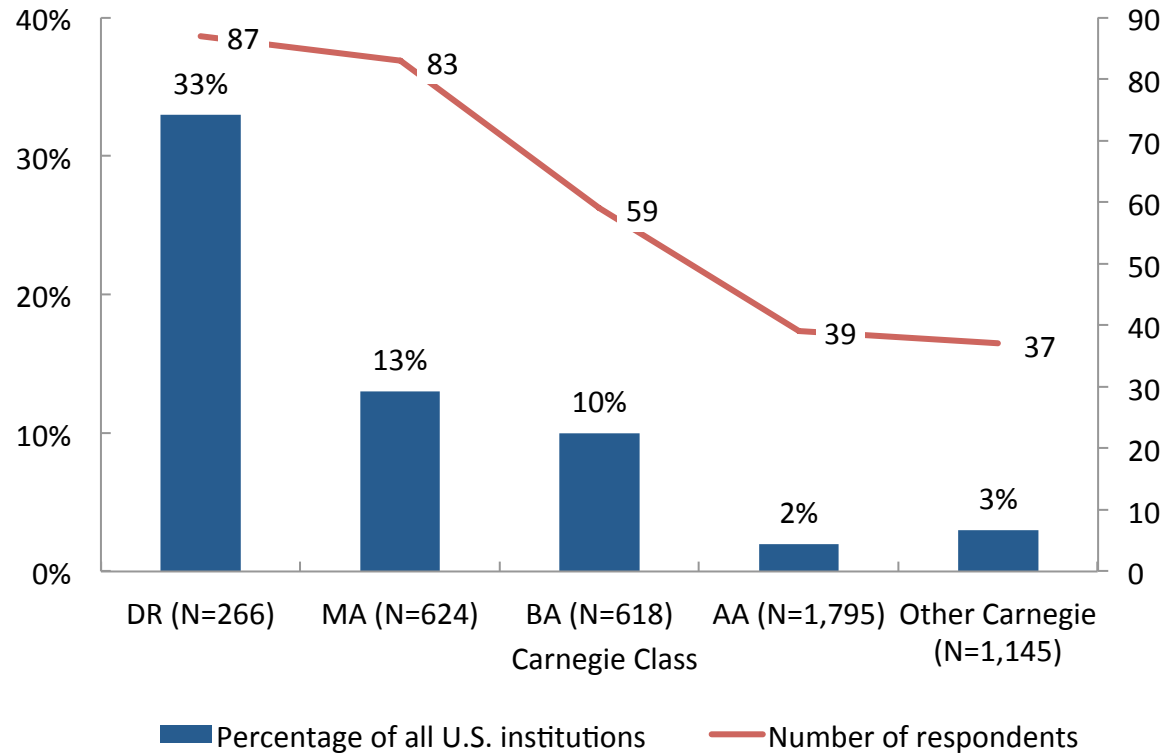
Primary Topics

- Survey Demographics
- Motivators and Challenges for ID Management initiatives
- Benefits of ID Management
- Initiating and Funding ID Management projects
- Five Core Elements of ID Management
- Key Outcomes

SURVEY DEMOGRAPHICS

2010 Survey Demographics

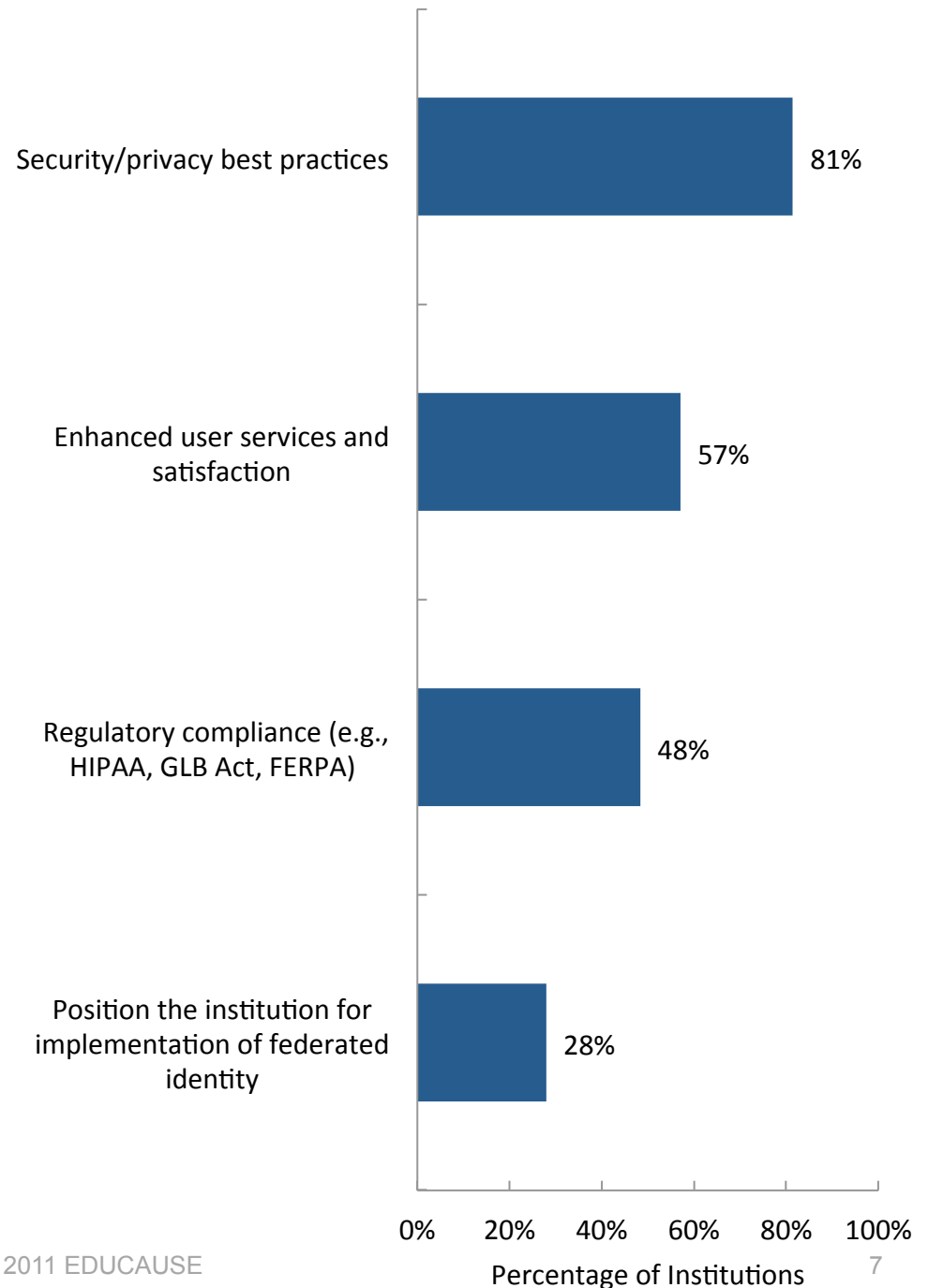
- 1,726 invitations
- 323 respondents
 - 18.7% response rate
- Doctorals overrepresented
- Associate's institutions most underrepresented
- Extends 2005 survey
 - 403 respondents in 2005
 - 137 responded to both surveys



MOTIVATORS AND CHALLENGES FOR ID MANAGEMENT INITIATIVES

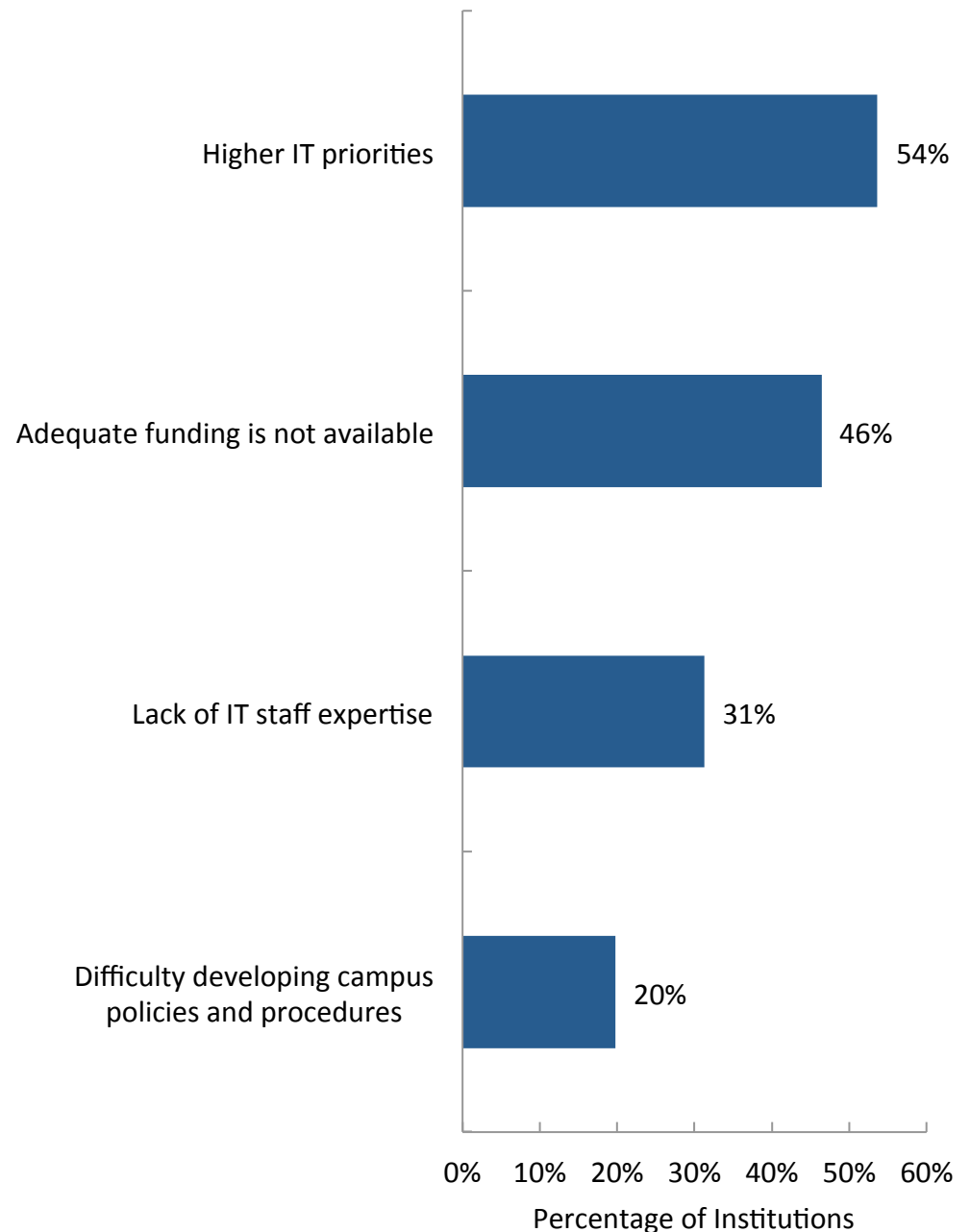
MOTIVATORS FOR PURSUIT OF IDENTITY MANAGEMENT

- Up to three responses allowed.
- Security and privacy concerns remain the primary motivator for IdM.
- Positioning the institution for federated identity was selected by 36% of the population in 2010 and only 21% in 2005, an increase of 1.7 X.
- No other motivator varied significantly by year.
- Differences by Carnegie class were few.



CHALLENGES TO PURSUIT OF IDENTITY MANAGEMENT

- Up to three responses allowed.
- No challenge was cited as often as the security/privacy motivator (81%).
- Most of the top challenges are organizational rather than technical.
- Difficulty developing campus policies and procedures was selected half as often in 2010 as in 2005. No other challenge varied significantly by year.

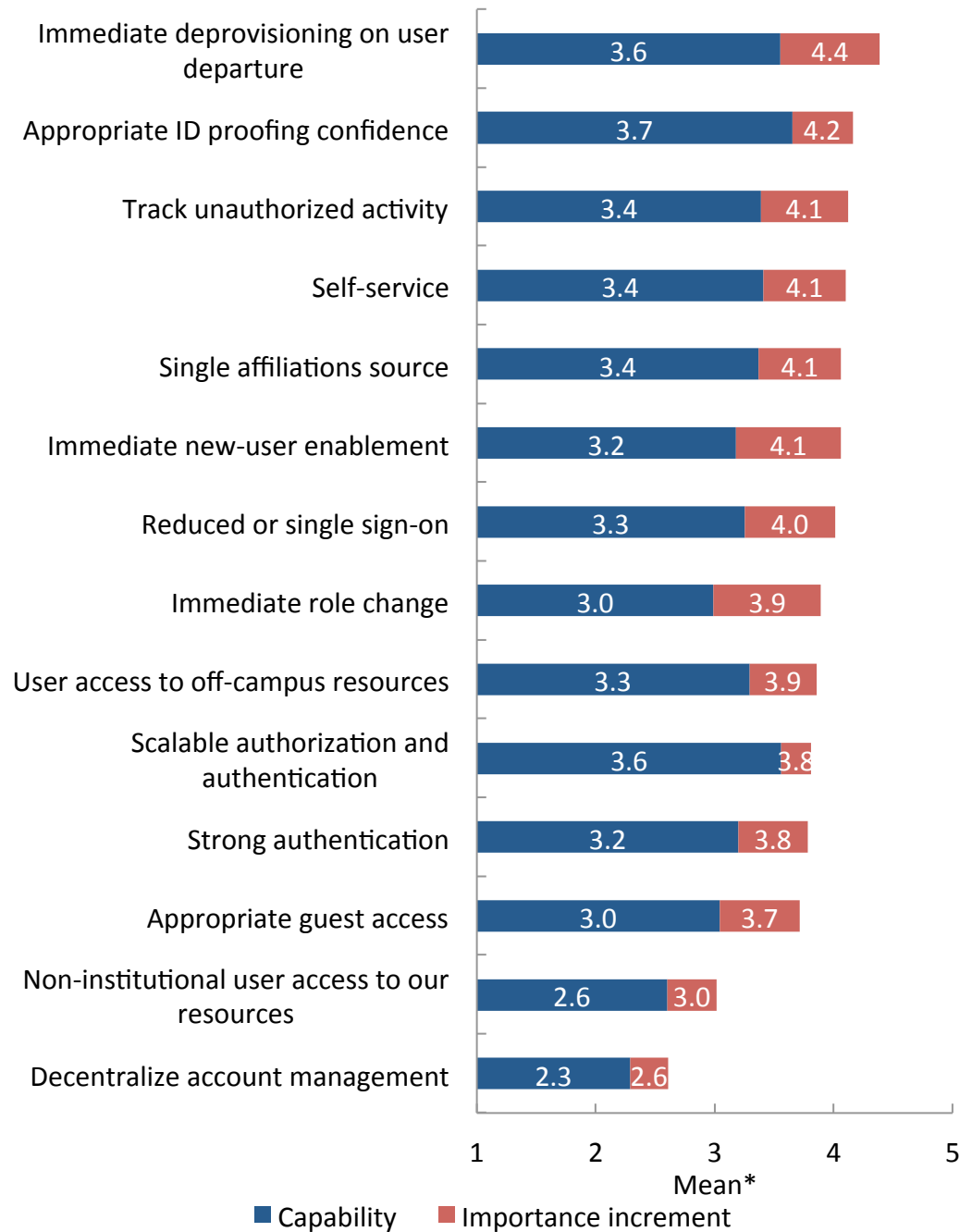


DISCUSSION BREAK 1

BENEFITS OF ID MANAGEMENT

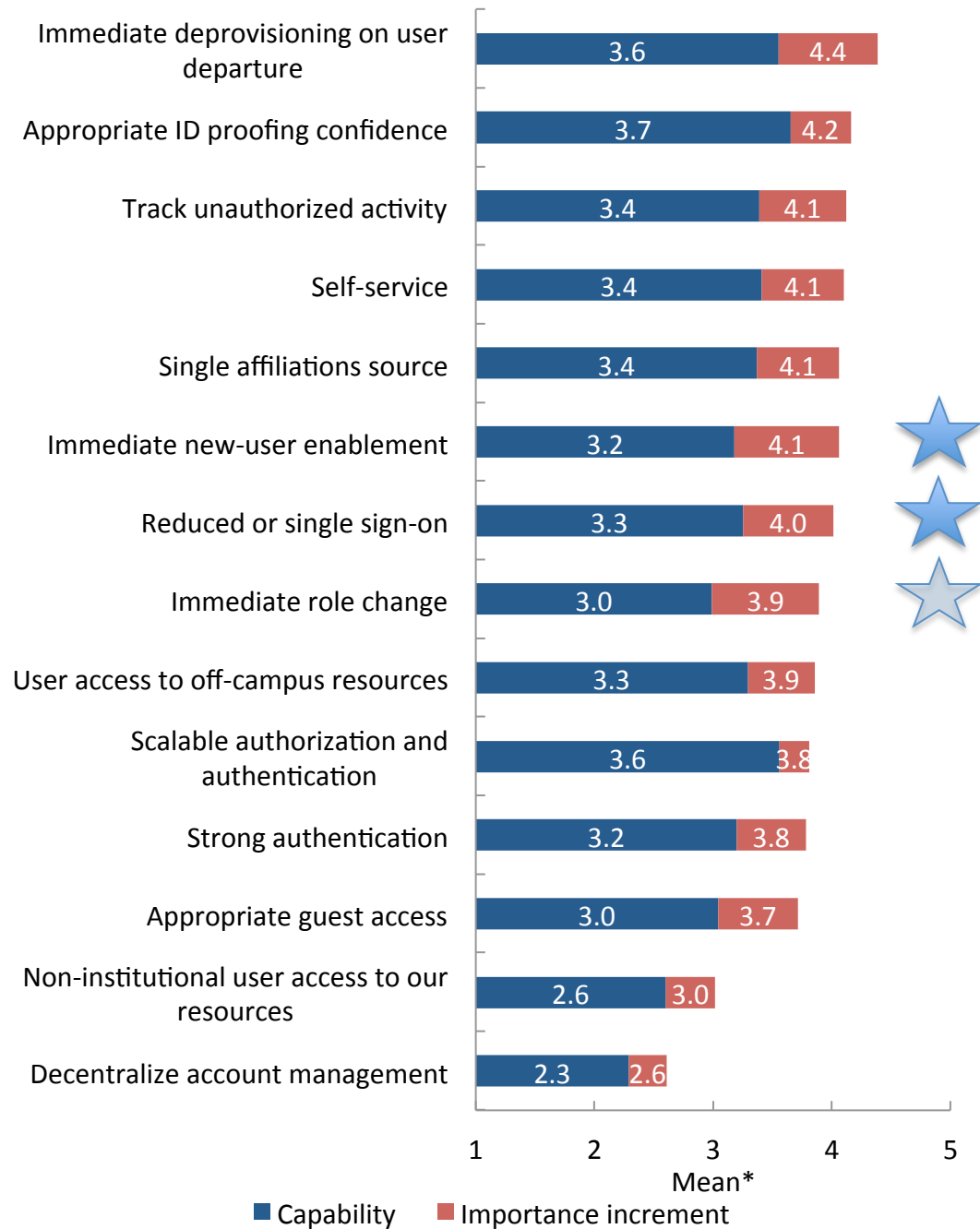
IDENTITY MANAGEMENT BENEFITS

- Mean importance exceeded mean capability by 0.3 to 0.9 points.
- Mean “capability gap” between importance and capability was 1.0 points in 2005 and only 0.6 points in 2010.



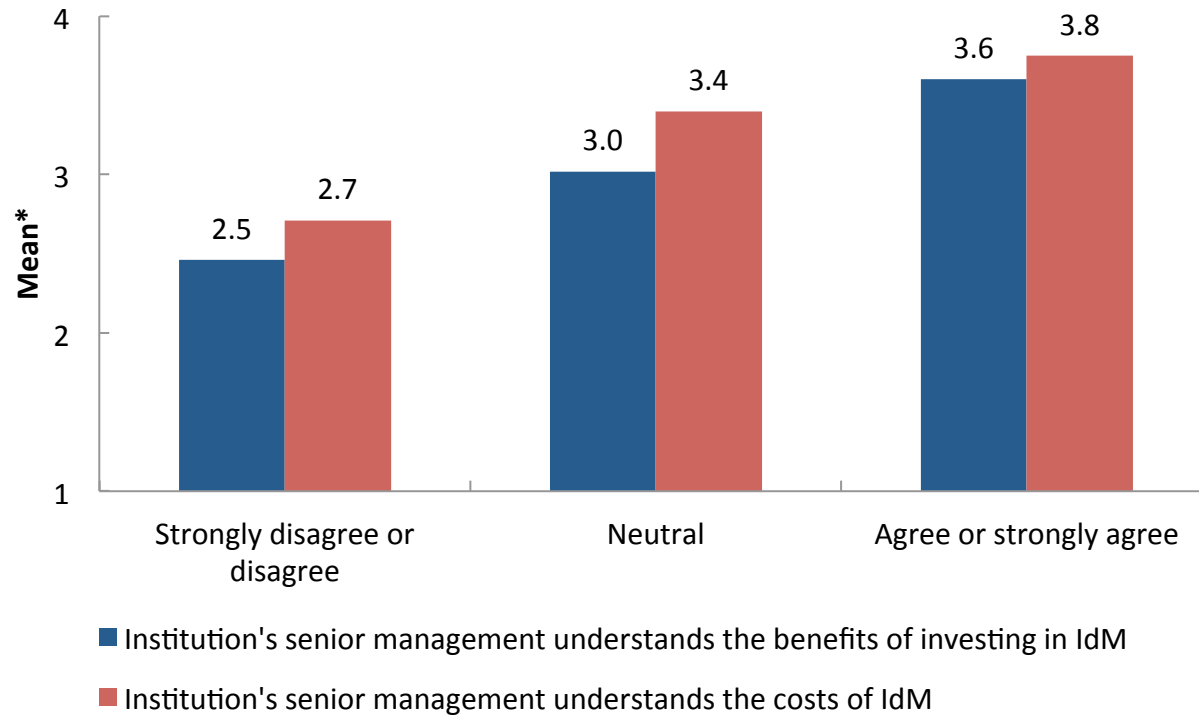
IDENTITY MANAGEMENT BENEFITS

- Mean importance exceeded mean capability by 0.3 to 0.9 points.
- Mean “capability gap” between importance and capability was 1.0 points in 2005 and only 0.6 points in 2010.
- Reduced or single sign-on and immediate new user enablement showed greater than median importance, but lower than median capability, suggesting need to invest in those benefits.



INITIATING AND FUNDING ID MANAGEMENT PROJECTS

RESOURCES FOR IDM TRACK WITH SENIOR MANAGEMENT UNDERSTANDING



*Scale: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

- In both years, where senior management understood IdM costs and benefits, mean agreement about resource provision was at least a full point higher.
- Those agreeing that senior management understood the benefits of IdM increased by 43% from 2005 to 2010; those agreeing it understood the costs more than doubled.

COORDINATING IDM PROJECTS

IdM projects became more focused between 2005 and 2010.

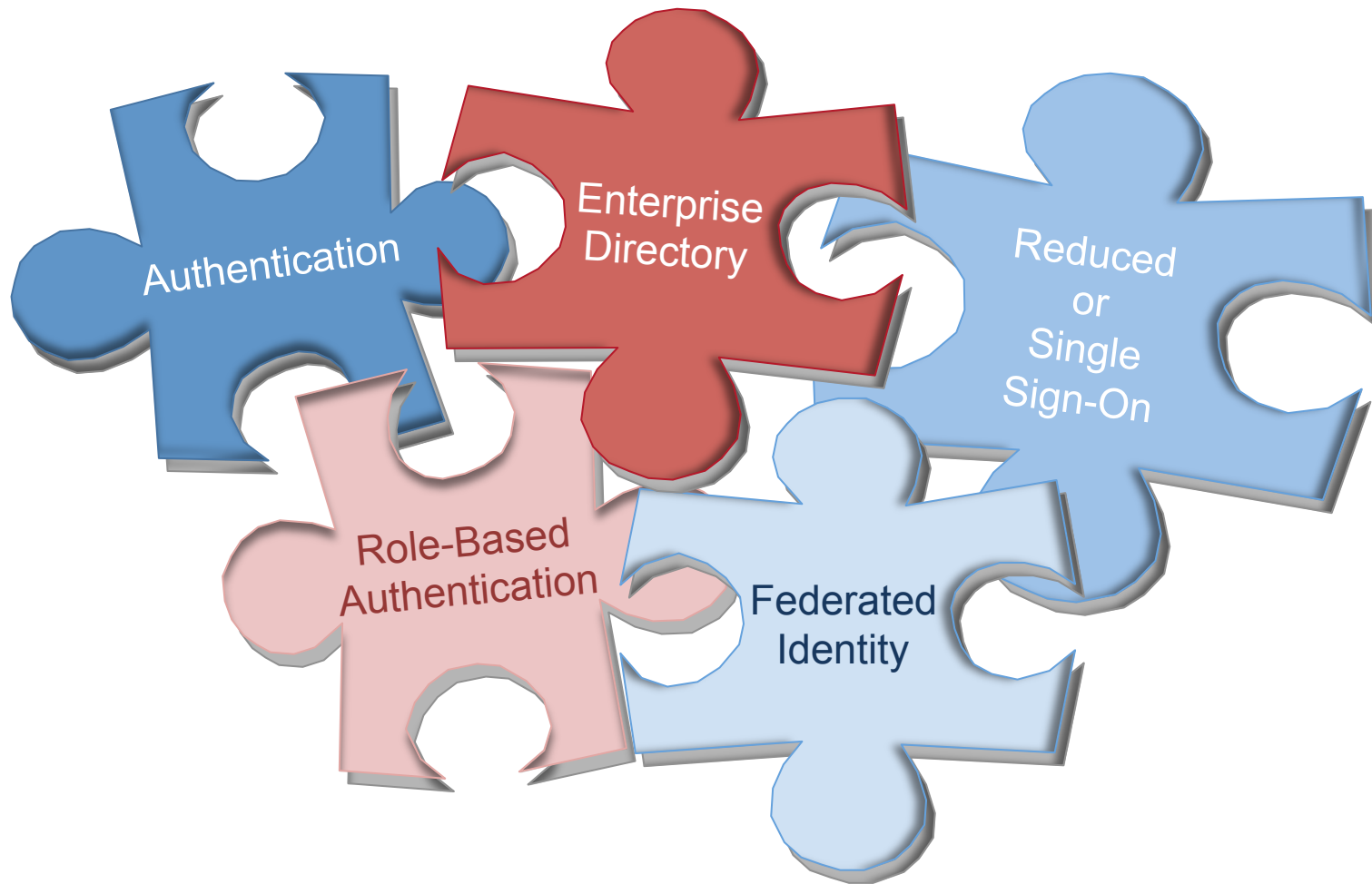
In 2010:

- They were 50% more likely to stand alone, 25% less likely to be bundled with security projects and 33% less likely to be bundled with portal projects.
- They were equally likely to be funded through one-time campus budget allocations but 60% less likely to have their funding bundled into other project budgets such as an ERP.
- They were about half as likely to be sponsored by IT administrators other than the CIO or chief information security officer.

DISCUSSION BREAK 2

FIVE CORE ELEMENTS OF ID MANAGEMENT

FIVE CORE IDENTITY MANAGEMENT ELEMENTS



FIVE CORE ELEMENTS OF IDENTITY MANAGEMENT

- **Authentication:** Are you who you say you are? By authenticating with trusted credentials, you let networks, systems, and applications know you can be trusted.
- **Enterprise Directory:** Does your institution have a single, authoritative repository of information about IT resources and their users? An enterprise directory will provide one.
- **Reduced or Single Sign-On:** How many usernames and passwords must you juggle to access the IT resources you need? Reduced or single sign-on technologies can help keep that number manageable.
- **Automated Role- or Privilege-based Authorization:** What do you need IT resources for? In complex IT environments, the process of empowering users to carry out their roles can benefit from automation.
- **Federated Identity:** Do you need to use IT resources that another institution maintains and protects? An identity federation lets you use locally assigned credentials to gain access to remote resources.



- Passwords remain the primary authentication method.
- Kerberos is used by a third of respondent institutions (and by more than half of doctorals).
- Expect growth in use of strong passwords and multi-factor methods other than biometric ID.

AUTHENTICATION METHODS IN USE

1. Conventional password. **87%**
2. Strong password. **77%**
3. Kerberos. **35%**
4. PKI certificate (software). **20%**

Others <20%:

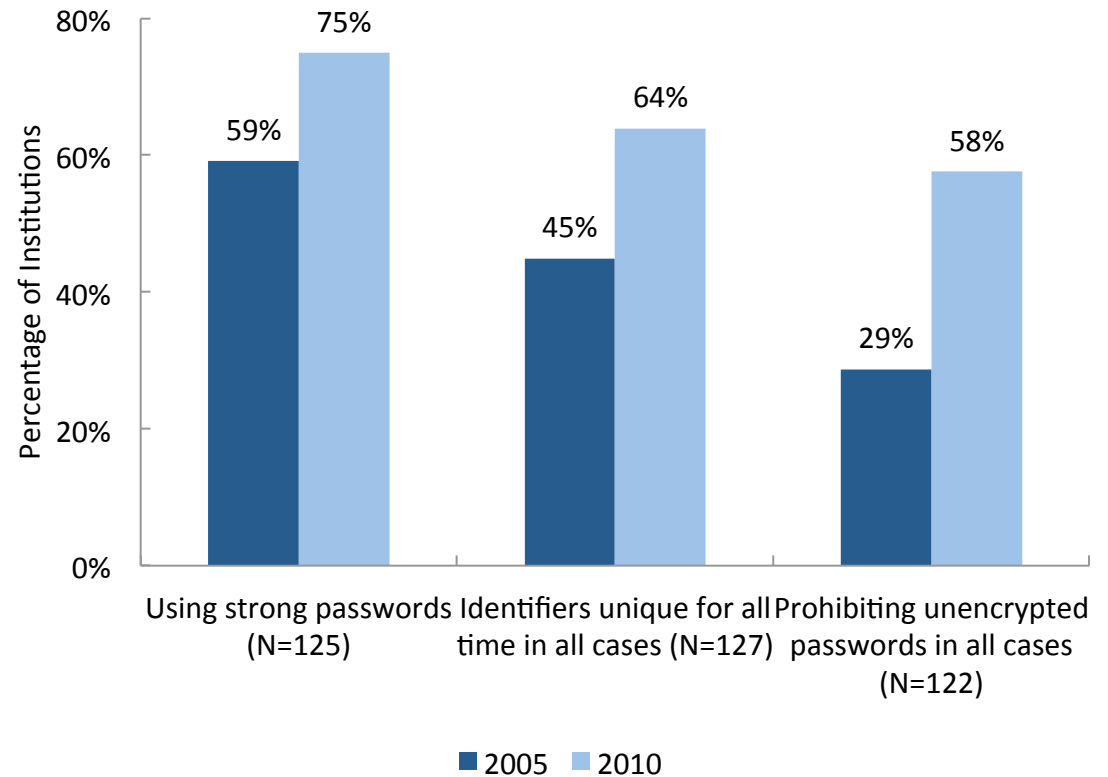
- Secure ID-style one-time password
- Other multi-factor authentication methods
- PKI hardware token
- biometric identification

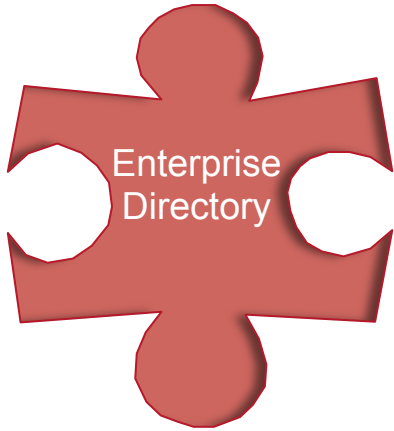


2010 Saw Progress In:

- Use of strong passwords
- Use of “unique for all time” identifiers
- Prohibiting transmission of unencrypted passwords

Progress In Application of Identifier Policies and Practices

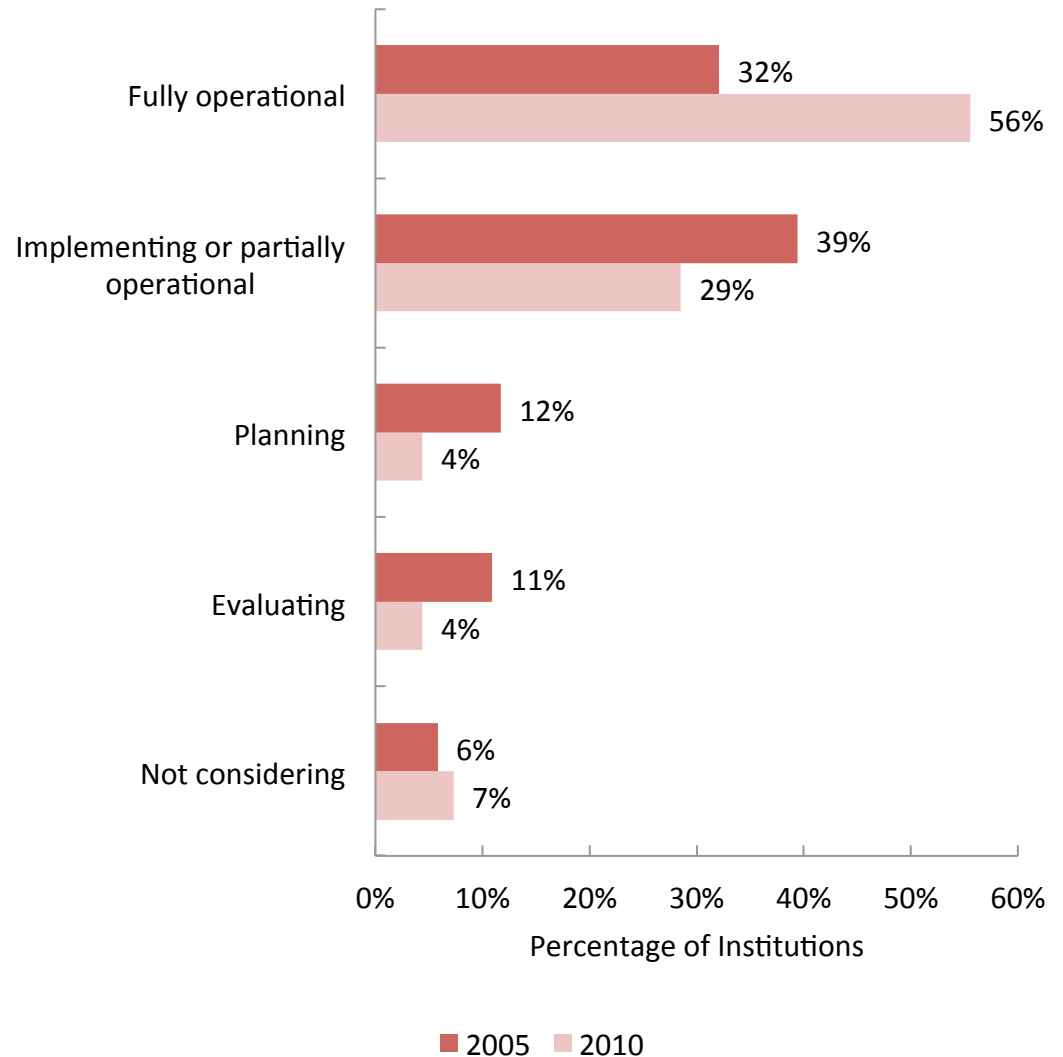


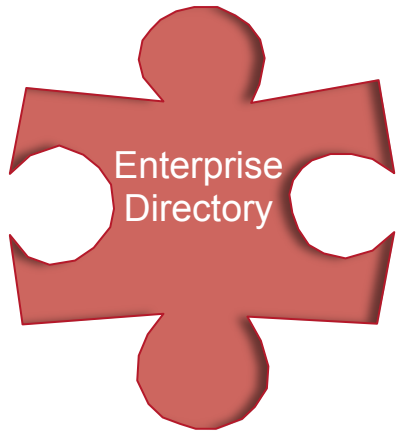


Enterprise Directory:

- Fully operational implementations (FOIs) nearly doubled between 2005 and 2010.
- Larger institutions more often reported FOIs.
- EDs are used most for authentication and authorization and to store affiliation and group information, and less often for other functions.

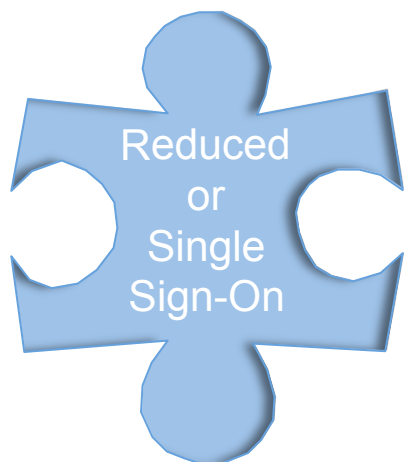
Stage of Implementation of Enterprise Directory, by Year (N=137)





Enterprise Directory Approaches (multiple responses allowed)

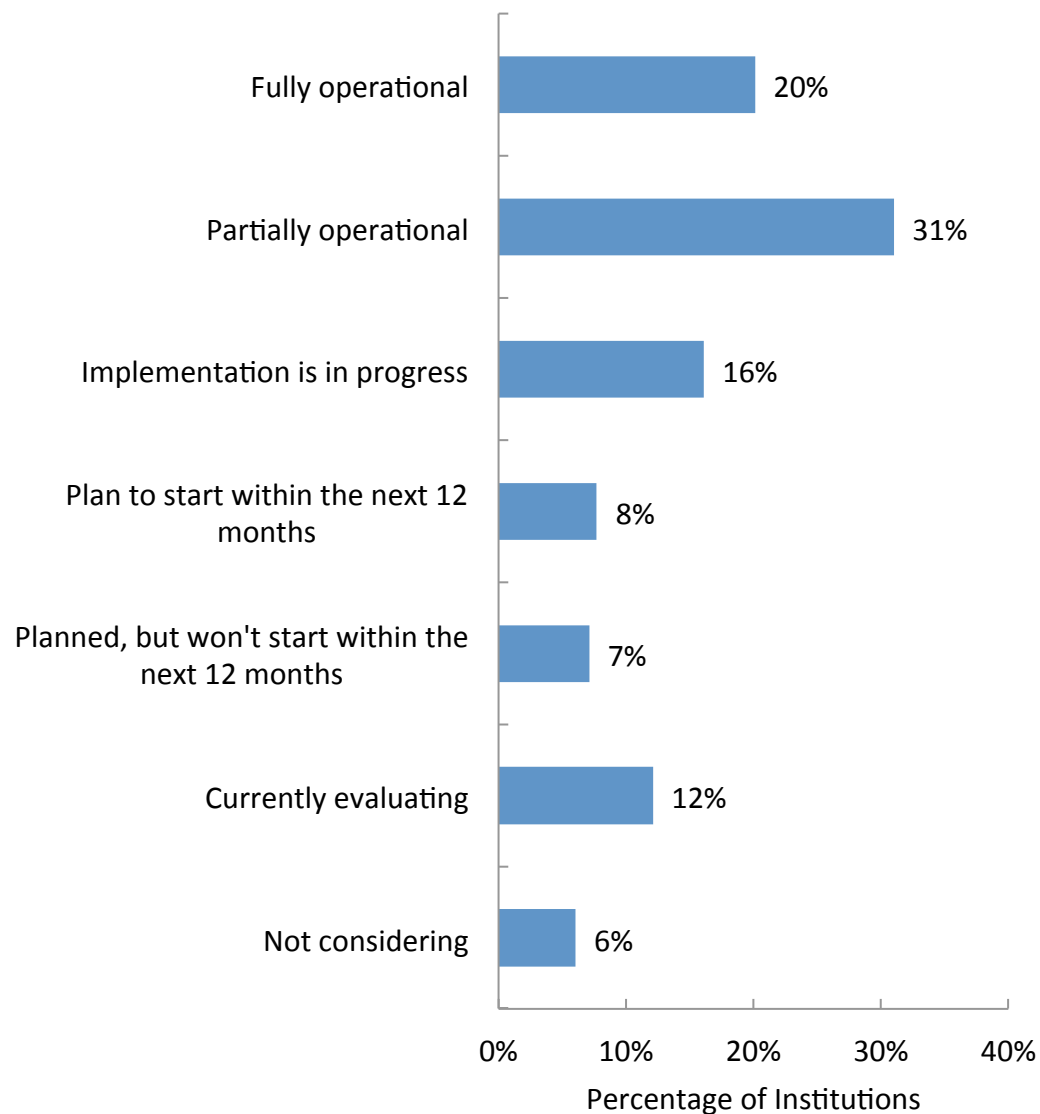
- A **network operating system** approach was in the top three for all Carnegie classes (<50% only for doctorals).
- Doctoral institutions (40%) were more likely than any other Carnegie class (9%-33%) to approach ED as a stand-alone system using **commercial vendor software**.
- Stand-alone, **open-source** ED systems were in the top three approaches selected by doctoral (33%), BA-liberal arts (29%), and other bachelor's (9%) institutions.
- All classes but doctorals and BA-liberal arts institutions often (>20%) selected "part of **vendor-supplied application software** (e.g., ERP)" as a top-three approach.



Reduced or Single Sign-On:

- Half of respondents report at least partially operational implementations of RSSO,
- There was no significant change in stage of implementation from 2005 to 2010.
- Stage of implementation was more advanced among larger institutions and doctorals than among smaller, less complex ones.

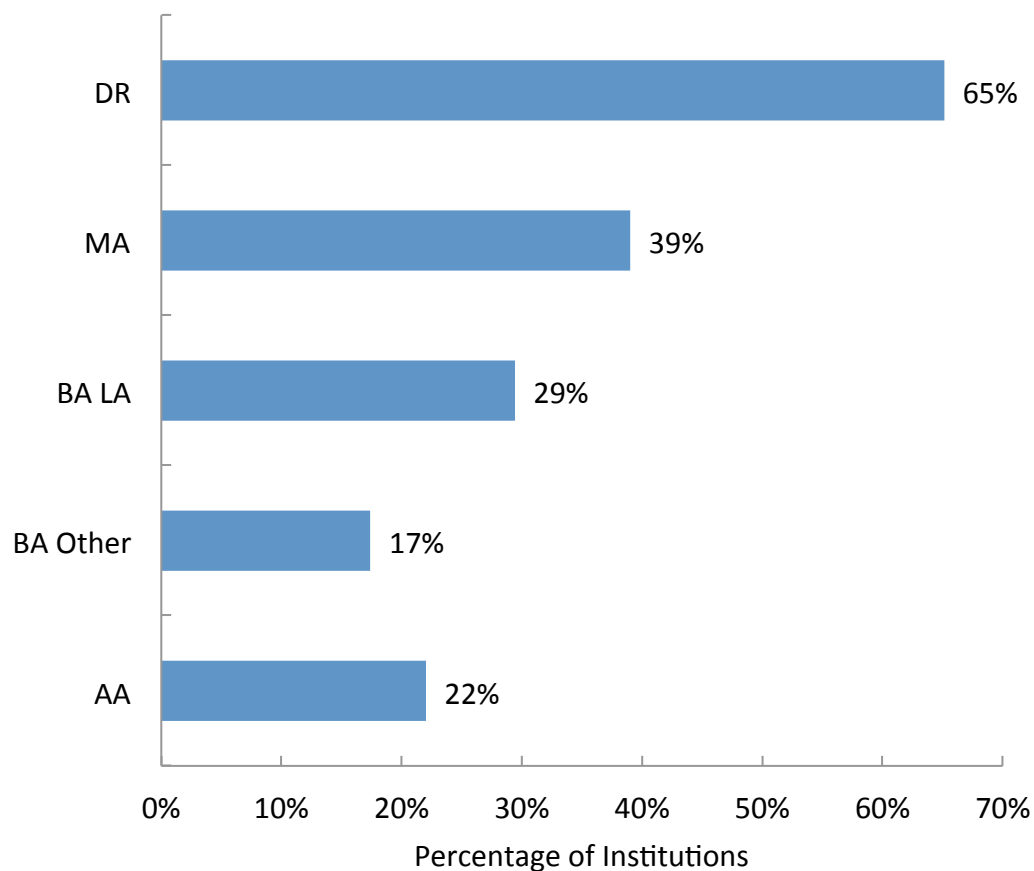
Stage of Implementation of Reduced or Single Sign-On
(N=323)





- Open-source software such as Kerberos, CAS, or PubCookie was most frequently selected as an RSSO approach (41.4%).
- Doctorals were most likely to select open-source software as an approach.
- Commercial vendor (e.g., RSA, Aladdin) and homegrown software were selected by about a quarter of respondents.

Selection of Open-Source Software As an Approach to Reduced or Single Sign-on, by Carnegie Class (N=254, Excludes Respondents Not Considering RSSO)

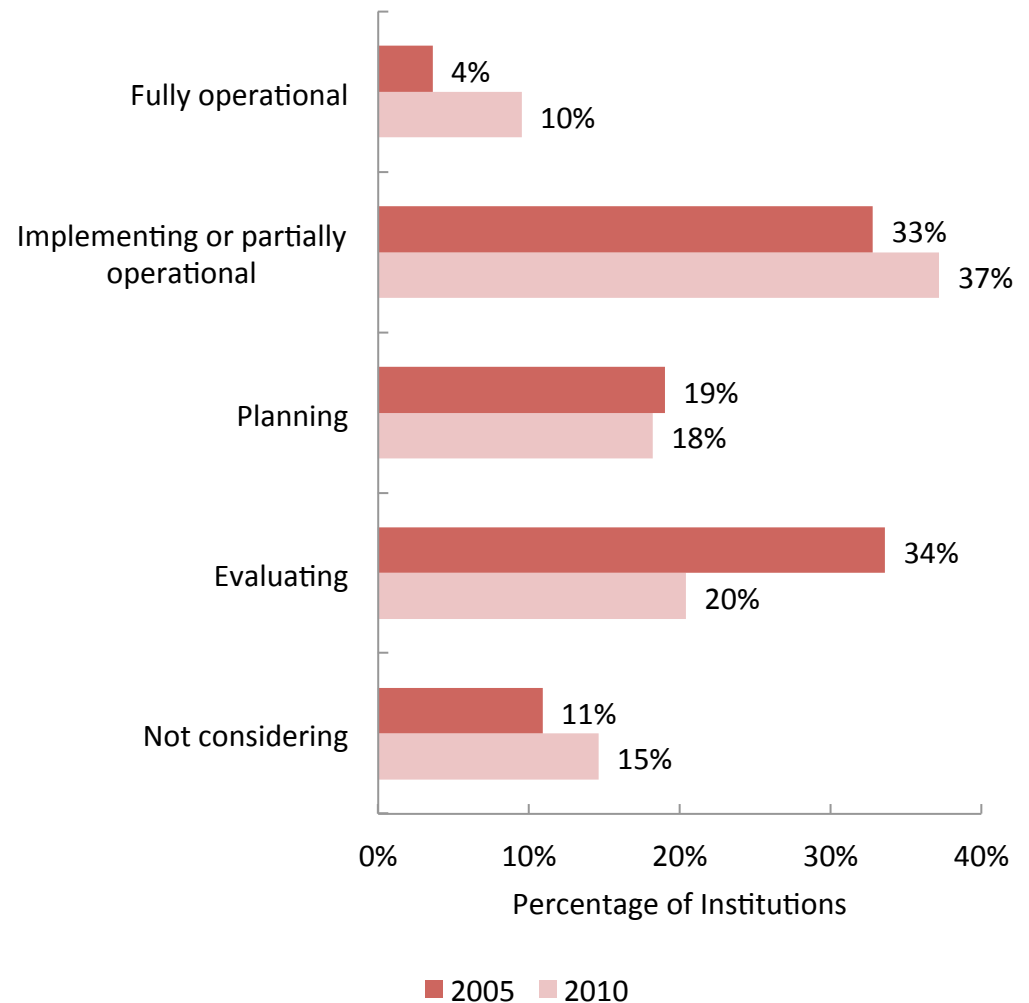




Role-Based Authentication:

- Implementation activity increased from 2005 to 2010; FOIs more than doubled.
- In 2010 doctoral and master's institutions were most likely to have FOIs, followed by associate's and then bachelor's institutions.
- Stage of implementation differed significantly but not greatly with institution size.

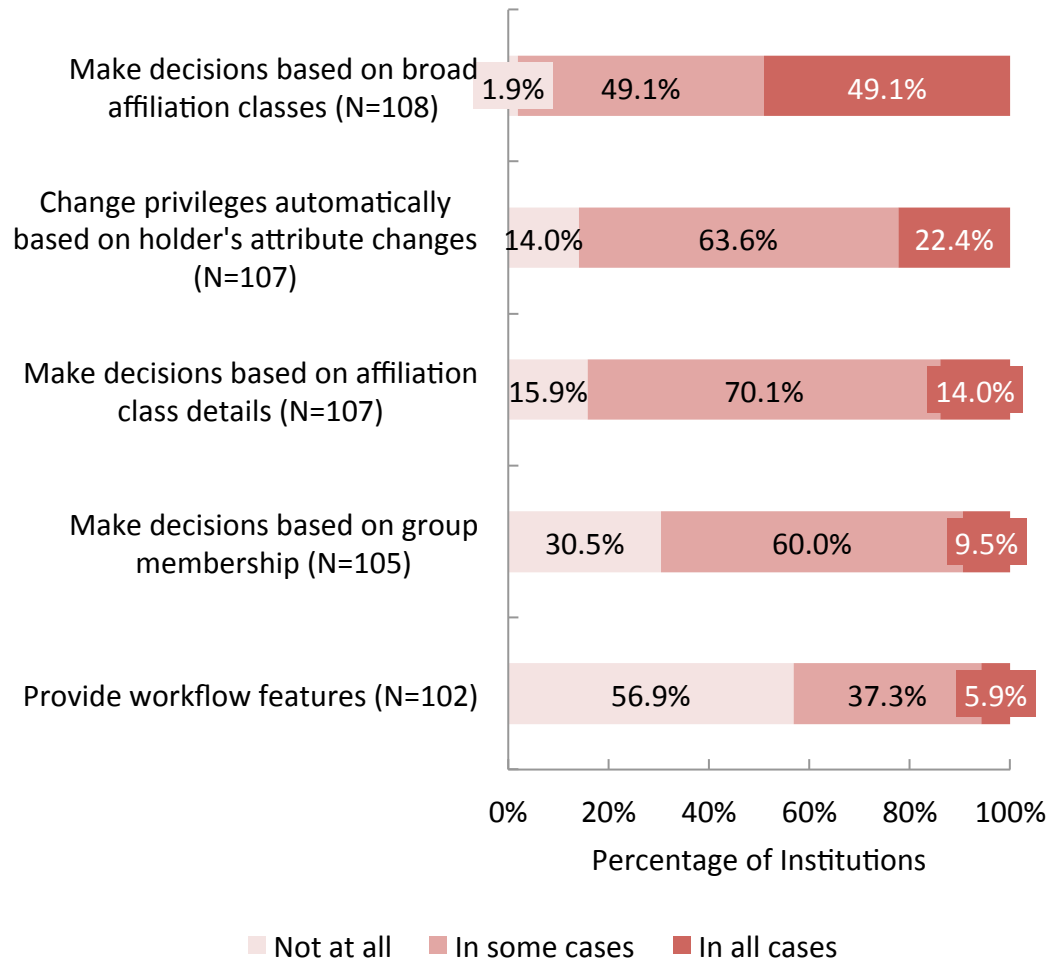
Stage of Implementation of Role-Based Authorization, by Year (N=137)





- Where automated role-based authorization is in place, it is applied most often for broad affiliation classes.
- Ability of the institution's role-based authentication environment to make privileging decisions based on fine-grained roles or affiliations in all cases was seven times as common at public institutions as private ones; no other ability varied by Carnegie class, institution size or institutional control.

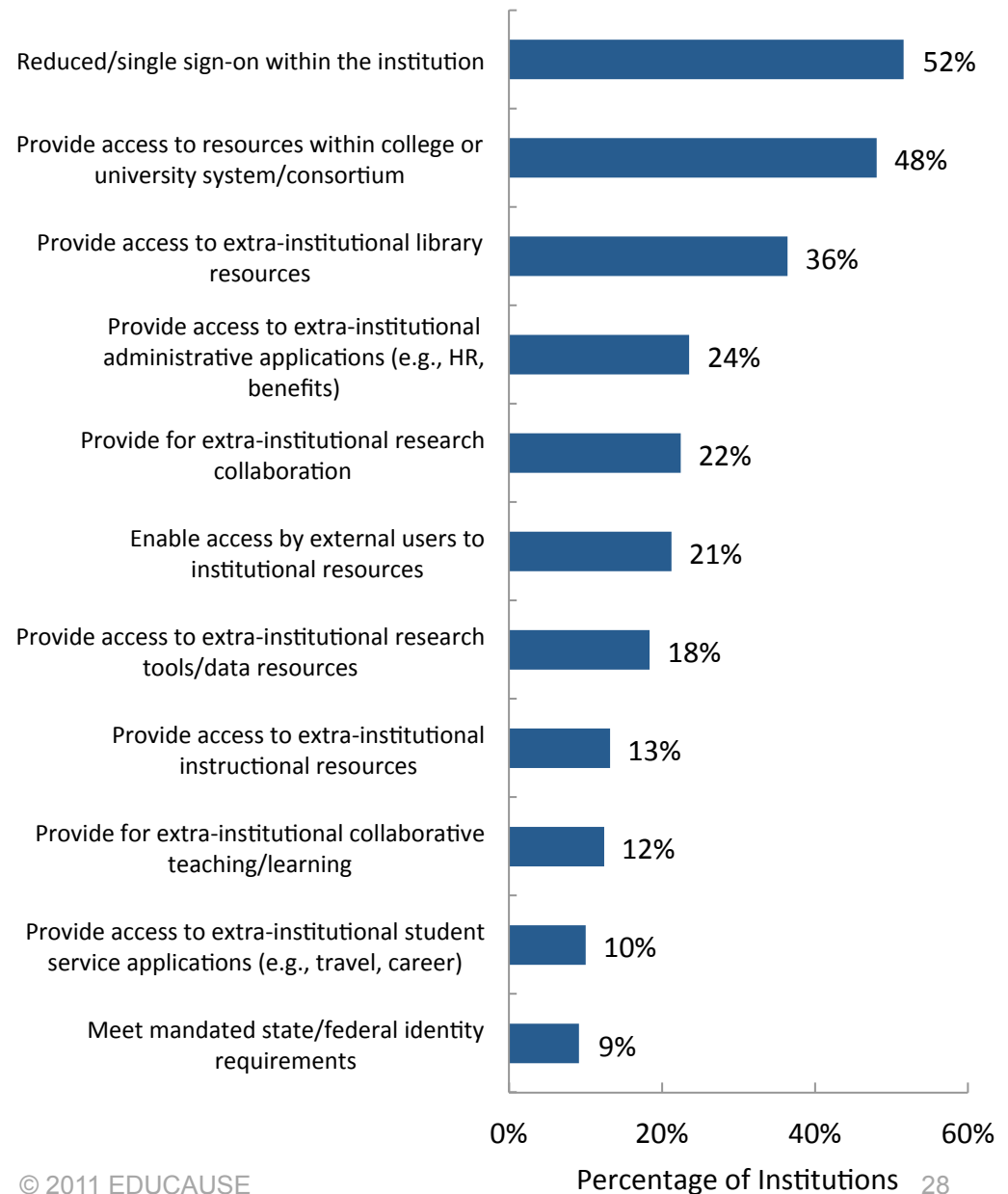
Abilities of Institution's Role-Based Authorization Environment (Partially or Fully Operational Implementations Only)





- A small majority of respondents included reduced/single sign-on *within the institution* among the three they considered “primary.”
 - Doctorals were the Carnegie class least likely to include this motivator but were much more likely than others to include providing for extra-institutional research collaboration.
- Relatively few included enabling access to institutional resources by external users.

Top Motivators for Evaluation or Implementation of Federated Identity (N=250, Up to Three Responses Allowed)

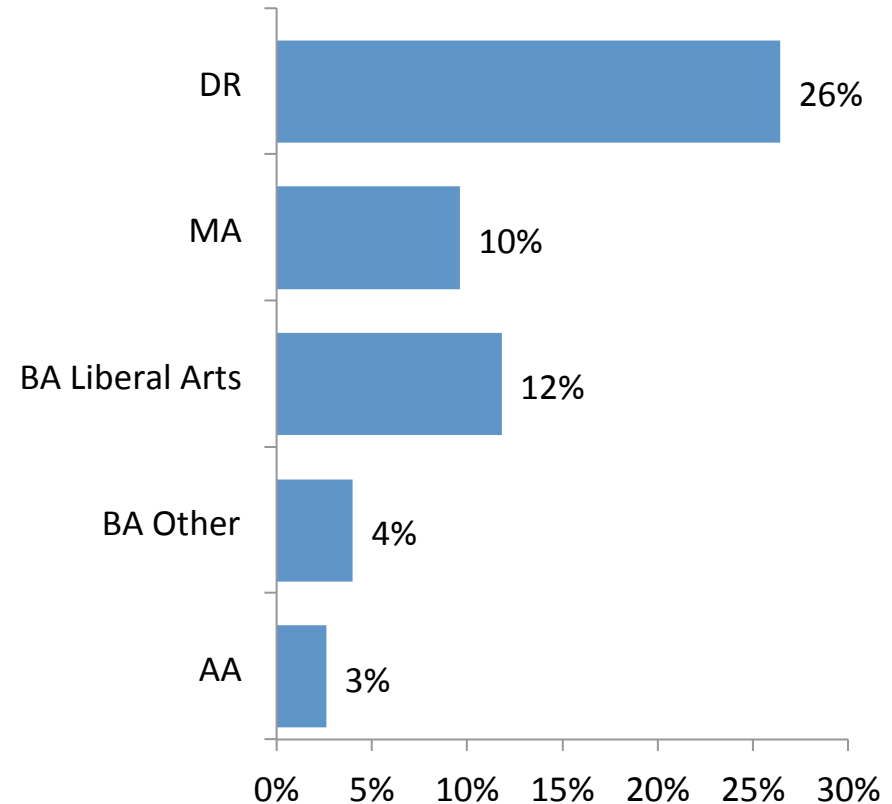




Federated Identity (FID)

- Doctoral institutions were more than twice as likely as other Carnegie classes to have fully operational FID solutions in place and were much more likely to have implementations underway.
- 53% of respondents agreed or strongly agreed that over the next 12 months, demand for cloud computing resources would increase need for FID services.

Respondents with Fully Operational Federated ID Solution



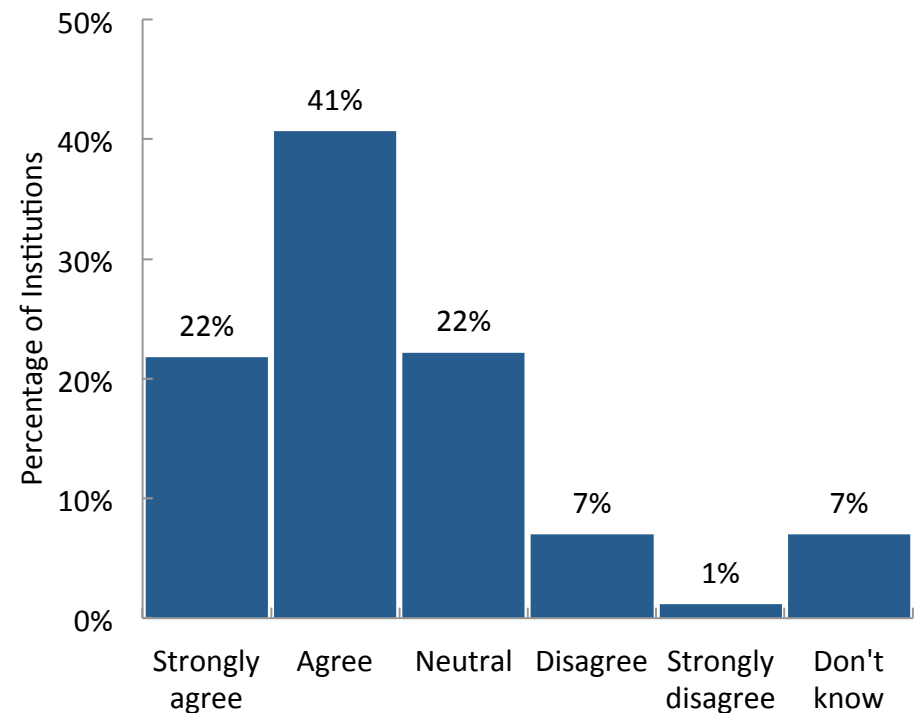
DISCUSSION BREAK 3

KEY OUTCOMES

OUTCOME: GETTING EXPECTED VALUE FROM IDM PROJECTS

- Most institutions agreed they were getting the value they expected from IdM projects.
- Among those that didn't agree, the majority were neutral on the question or didn't know the answer.
- Only 8% of respondents disagreed at some level.
- Mean agreement did not change significantly between 2005 and 2010.
- In neither year did mean agreement vary significantly by Carnegie class, institution size, or institutional control.

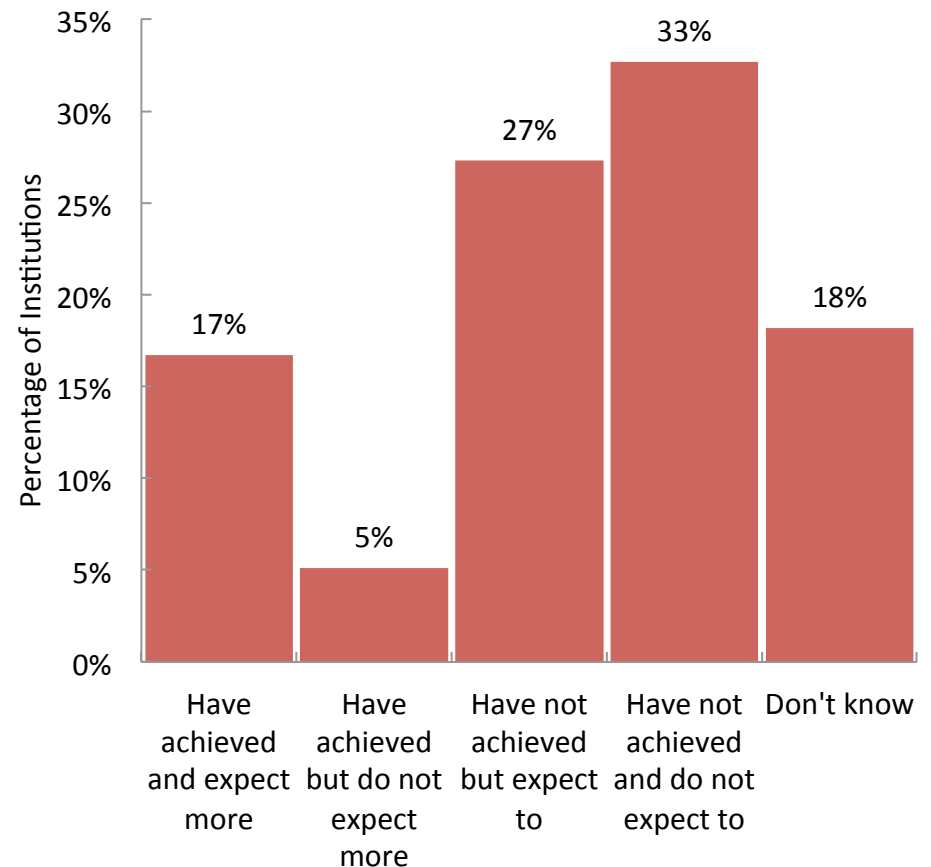
Institution Is Getting Expected Value from Identity Management Projects (N=226, Institutions Engaged In Projects)



OUTCOME: MEETING EXPECTATIONS ABOUT COST SAVINGS FROM IDM PROJECTS

- Nearly 1 institution in 5 didn't know if it had achieved cost savings from its IdM projects.
- Just over 1 institution in 5 had achieved cost savings from IdM projects but many of those did not expect more.
- Among those that had not achieved savings, slightly more than half did not expect to do so.
- Responses did not change significantly between 2005 and 2010.
- In neither year did mean agreement vary significantly by Carnegie class, institution size, or institutional control.

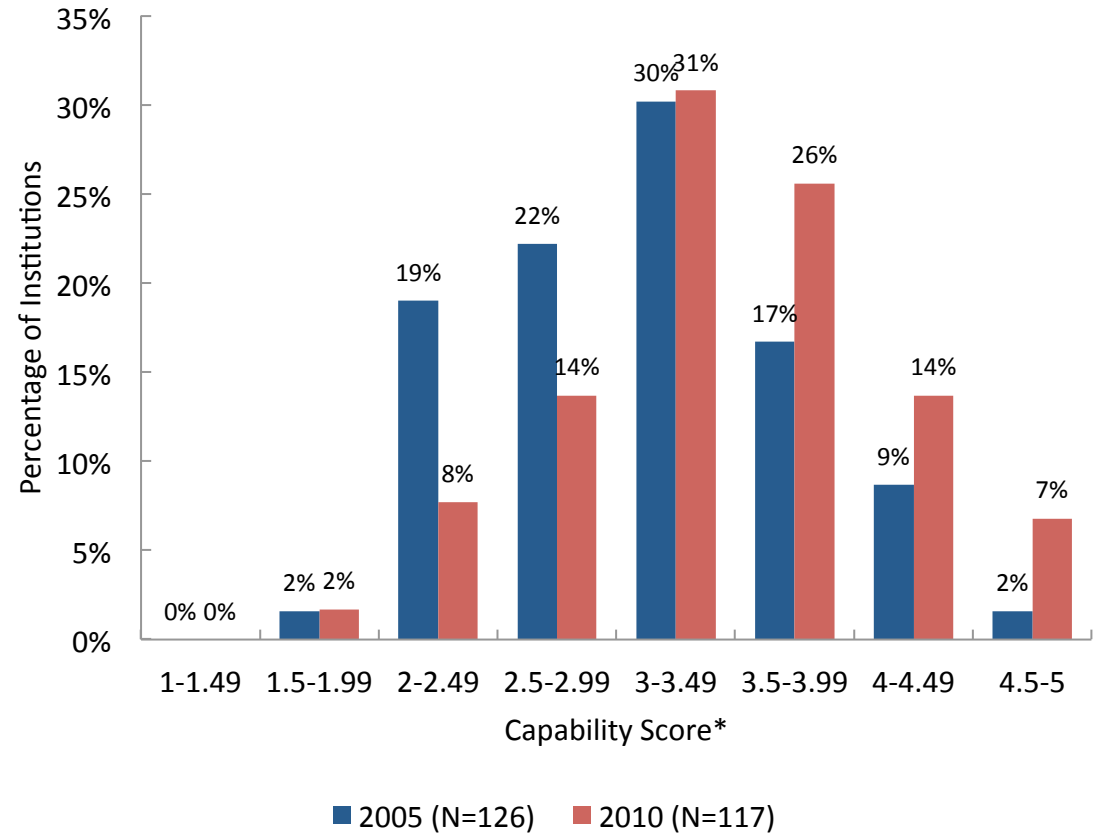
Meeting Expectations about Identifiable Cost Savings from Identity Management Projects (N=225, Institutions Engaged in Projects)



OUTCOME: IDENTITY MANAGEMENT CAPABILITY SCORE

- To compare institutions, for each one, we calculated its mean reported capability to deliver the 14 IdM benefits; we called the result the institution's "capability score."
- Capability score improved significantly between 2005 and 2010.
- In neither year did capability score vary significantly by Carnegie class, institution size, or institutional control.

Identity Management Capability Score, by Year



*Scale: 1 = very low, 2 = low, 3 = medium, 4 = high, 5 = very high

READINESS AND IDM OUTCOMES

- A number of IdM readiness activities are significantly associated with IdM capability score.
- Each appears to boost capability score by between 0.2 and 0.8 points on our five-point scale.

| READINESS ACTIVITY | Capability Score Boost* |
|----------------------------------------------------------------------------|-------------------------|
| Monitoring a set of IdM-related metrics | 0.8 point |
| Having IdM-related policies in place | 0.5 point |
| Documenting campus data custodians/owners | 0.5 point |
| Providing for recovery of identity services in disaster recovery plan | 0.5 point |
| Conducting an inventory of campus identifiers | 0.4 point |
| Conducting a risk assessment of data access security and privacy practices | 0.4 point |
| Providing sufficient resources for IdM | 0.3 point |
| Developing a documented plan for IdM | 0.2 point |

*Scale: 1 = very low, 2 = low, 3 = medium, 4 = high, 5 = very high

THANKS!
Mark Sheehan
msheehan@educause.edu

Resources:

- ECAR Research Hub for 2011 Identity Management Study
<http://www.educause.edu/ecaridm1101>
- ECAR Resource Page for 2006 Identity Management Study
<http://www.educause.edu/ECAR/IdentityManagementinHigherEduc/158591>

Upcoming Event

Shibboleth Workshop Series: Installation of IdP and SP

July 21-22, 2011 – Milwaukee, Wisconsin

www.incommon.org/educate/shibboleth

Evaluation

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