



# Leveraging the Extended Enterprise with Social Software

**Boston SIMS September 2012**

**Donna L. Cuomo, PhD**  
CI&T Chief Information Architect  
The MITRE Corporation

# Outline

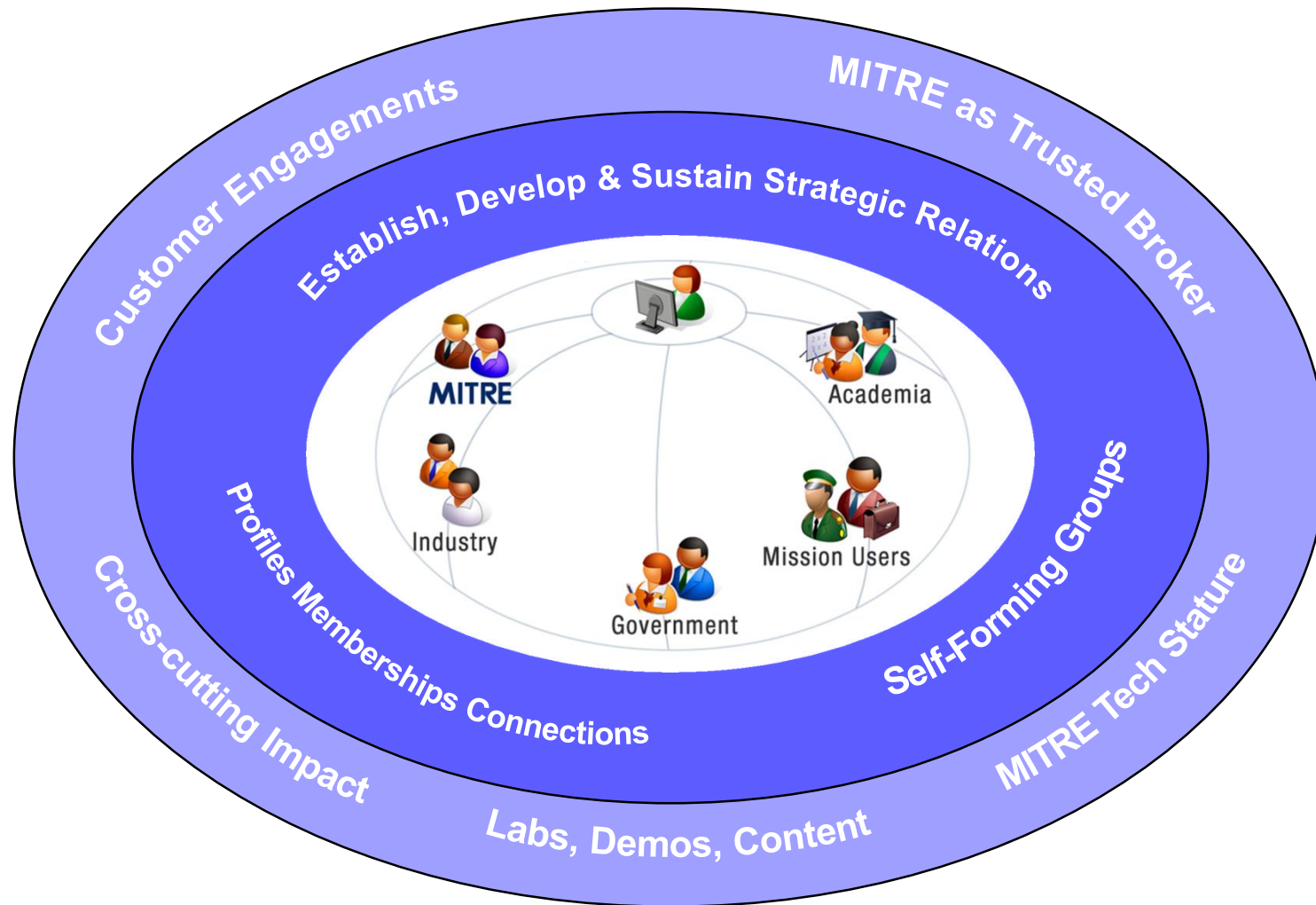
- **Strategy for Social Business Networking**
- **Overview of Handshake**
- **Business Value Assessment**
  - Usage Metrics
  - Case Study Interviews
  - Value Survey
- **Value Stories**
- **Future Plans for the Extended Enterprise**
- **Take Aways**

# The MITRE Corporation

- MITRE is a private, not-for-profit organization chartered to work in the public interest
- Founded in 1958 to provide engineering and technical services to the U.S. Air Force
- Currently manages 5 Federally Funded Research and Development Centers
  - Department of Defense
  - Federal Aviation Administration
  - Internal Revenue Service/Department of Veterans Affairs
  - Department of Homeland Security
  - Federal Judiciary
- Supports a broad and diverse set of sponsors within the U.S. government, as well as internationally



# Supporting Strategic Relationships and Multi-Organizational Collaboration



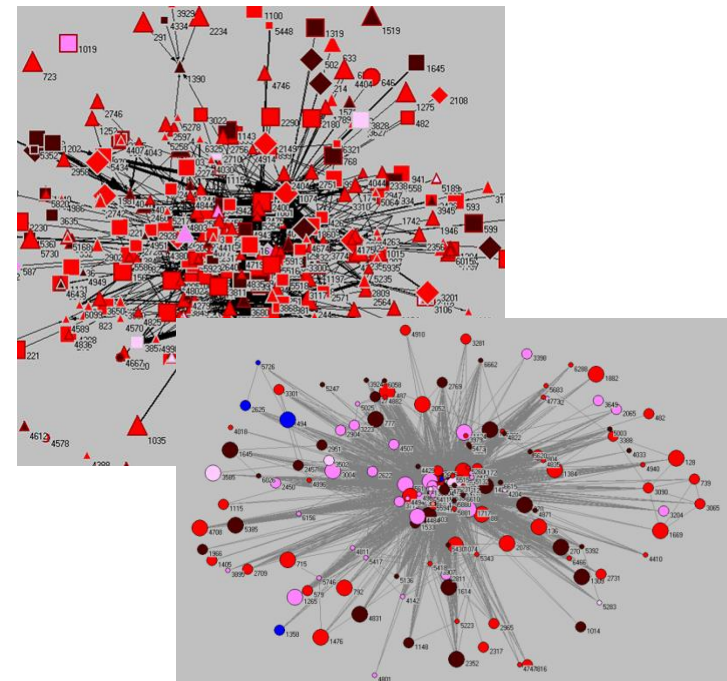
# State of the Practice in 2009 ...

- Social networking tools were proliferating on the internet
- Most enterprises were deploying social networking tools for *internal use only* or for *consumer product users*
- It is difficult to measure objectively how social tools impact individuals, communities, and the enterprise



# 2007: MITRE-Babson Research... Social Technology Matters!

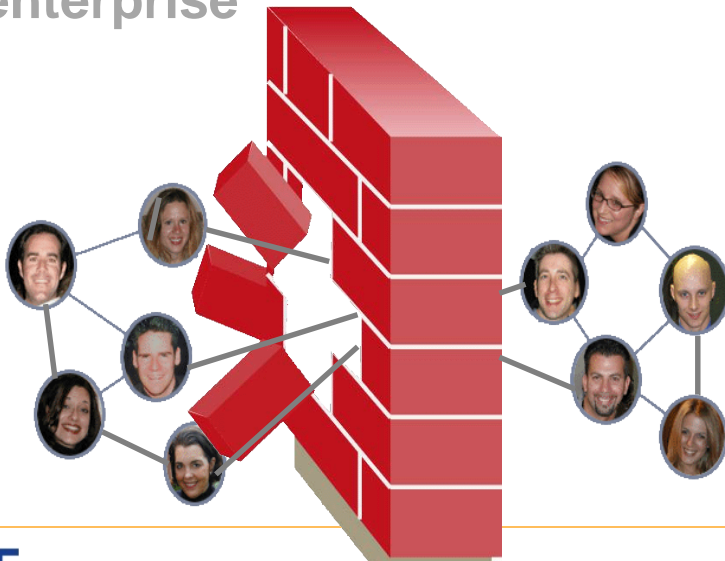
- Its not just frequency of use that is important with these tools, but rather, who you are connecting to
  - **Uniqueness of the connections adds the value**
- Brokerage, in both social networks and technology-mediated networks, has a positive impact on personal innovativeness
- Both of the technology networks (ListServ and social bookmarking/tagging) provide unique, significant value
- The social network & the technology networks complement each other





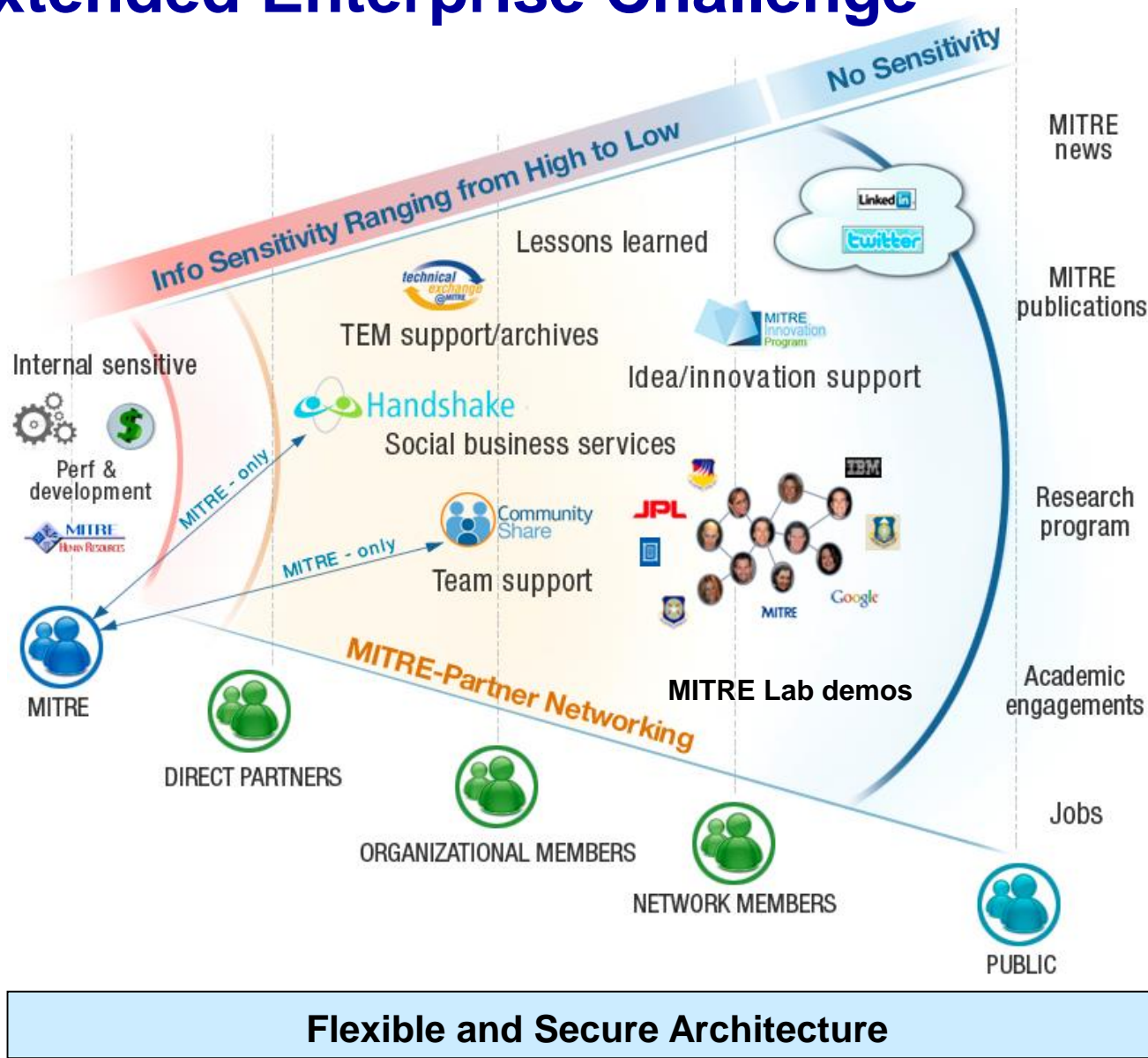
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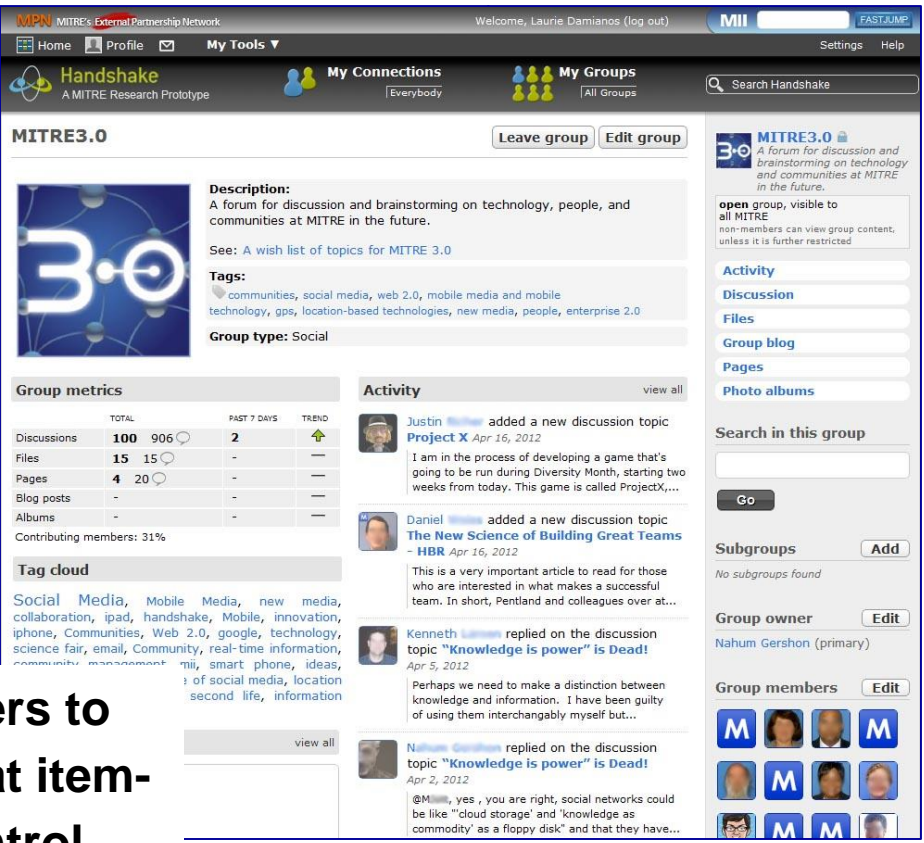
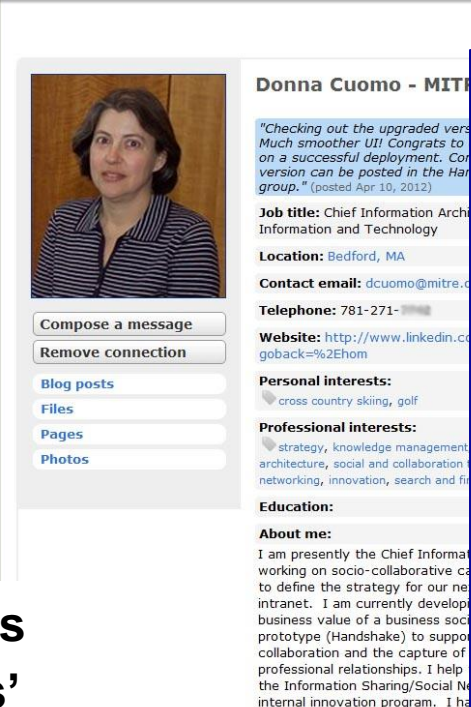
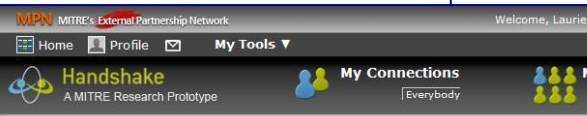
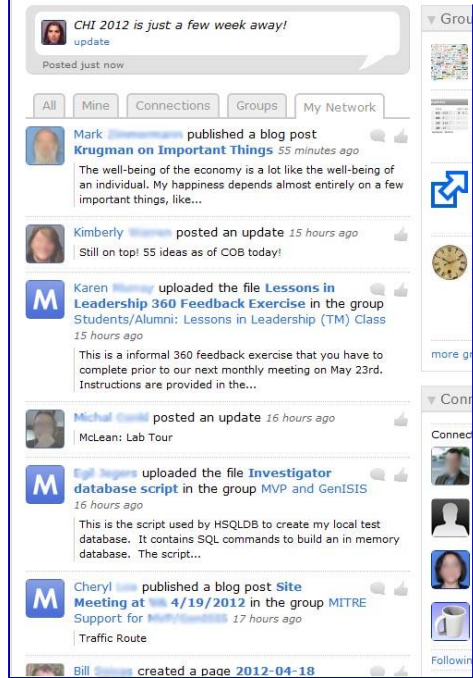
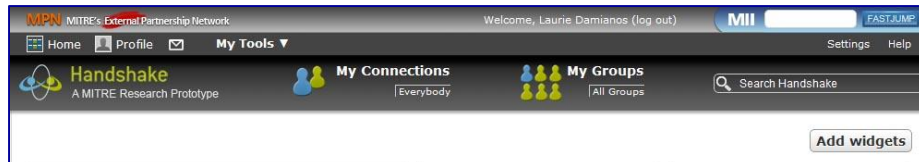
- Deployed a single open source platform (Elgg) to support both **internal** and **cross-organizational** networking
- We are now entering our 3<sup>rd</sup> year and performing a **longitudinal business impact evaluation**

# The Extended Enterprise Challenge





# Handshake: Social Business Networking



Groups create spaces for communicating on topics and collaborating on files / wiki pages

Home page provides awareness of users' network activities

Profiles allow users to share information at item-level access control



# Tool Customizations & Adaptations

Goals: remove barriers, accelerate adoption, encourage good behavior

- MITRE identity model with single sign on
- “Box Model” for group permissions
  - Restricts contents to group permission level ceiling
- Visualized permissions & access
- Connect vs follow; follow groups by default
- Group activity river
- Email notifications, respond via email
- Group metrics
- Colleague recommender

only me  
access list  
connections only  
group only  
MITRE members of a gr  
all MITRE  
all Handshake members

**has non-MITRE members**

Leveraging Cloud Computing Concepts within the Federal Government

Group metrics				
	TOTAL	PAST 7 DAYS	TREND	
Discussions	44 71	4 1	↑	
Files	84 47	8 4	↑	
Pages	4 22	1 1	↑	
Blog posts	6 1	- 1	↓	
Albums	1	1	↑	

Contributing members: 71%

Group activity

Donna / has posted a new comment on a discussion topic titled User guidance for when it is OK to edit a wiki page (19 hours ago)

Jack: has posted a new comment on a discussion topic titled User guidance for when it is OK to edit a wiki page (19 hours ago)

Donna / has started a new discussion topic titled user guidance for when it is OK to edit a wiki page (21 hours ago)

Donna / wrote a new page titled User Guidance for when you should edit a wiki

Recommended Contacts

Recommended Contact Details

Daniel @mitre.org

★★★★★

Friend of a Friend

Listserve

Friend of Daniel

Onomi Tags

Your digest for Thursday

Handshake

Sent: Thu 3/8/2012 1:08 AM

To: Cuomo, Donna L.

Wednesday, March 7, 6:50 AM

Beth has commented on the discussion topic "Current relevance and confidence rating method used for Discover" in the group "MII Discover".

Sean

Yes the content that is searchable through Discover is located in different repositories. A variety of search tools are used - Google for general document and site search, Microsoft search for SharePoint, and Endeca for the Profiles search for starters. Each system is unique and far too detailed to describe here. I'm happy to set up a meeting with the Search and Information Retrieval team to discuss.

Regards

Beth

**email a reply** (before Mar 22, 2012)

email a status update (before Mar 22, 2012)

Released to open source community

# Handshake on our Intranet Homepage

[IRS](#) | [Site Map](#) | [Index](#) | [Help](#)

Good morning, Donna Wednesday, September 12, 2012 8:23 AM EDT

**Phonebook** [Docs & MII](#) [Project Profiles](#) [Comm Share](#) [People Profiles](#) [More...](#)

Person   [Advanced Search Help](#)

**MITRE NEWS**

1 of 3

**David Contribution** **Lasting**

Right up to the very end of his MITRE Veterans Employment Training internship, David was...

[NEWS CENTER](#) | [PEOPLE](#) | [CLASSIFIEDS](#)

**FastJump: Care Packages**

**Donate Now!**

**Thanks For the MemorIEs**

FastJump: memories

**Innovative Uses of Social Media in the US Government**

September 18 10:30-12:30  
MITRE 2 IN100 A (B-AUD)

**HANDSHAKE NOTIFICATIONS**

Attending MIP Innovation Leadership Team meeting in Wash [update](#)

Posted Jun 18, 2012

**Bryn** replied on the discussion topic **Easier Outernet access via QR Code in the group iPhone Users** (15 minutes ago)

**George** added a new discussion topic **Tweet ownership at issue in the group Records Management Interest Group** (16 minutes ago)

**Marie** posted an update (15 hours ago)

**Daniel** replied on the discussion topic **Easier Outernet access via QR Code in the group iPhone Users** (16 hours ago)

**Jon** replied on the discussion topic **Easier Outernet access via QR Code in the group iPhone Users** (19 hours ago)

**Lea** posted an update (21 hours ago)

**Michal** posted an update (22 hours ago)

**Jon** posted an update (23 hours ago)

**Ethel** joined the group **Document Mobility Access Trials** (yesterday)

**Kathleen** joined the group **Document Mobility Access**

**CLARITY QUICK APPROVE**

**Items Awaiting RM Approval** 0

**Items Awaiting PL Approval** 2

▼A7 HANDSHAKE 1

	Sep	Oct	Nov	Dec
Damianos, Laurie	0.15	0	0	0

Total Estimated Delivery:

<http://info.mitre.org/> ARCH 1

**WEATHER**

MA - Bedford

Wed	Thu	Fri	Sat	Sun
79   57	81   57	84   54	79   57	73   54

wunderground.com

**ONOMI BOOKMARKS - SOC NET**

■ McKinsey Global Institute - The social economy: Unlocking value

**MY TRAVEL**

**11 days until next trip**

**Reservation Summary**

Destination	Start Date	Confirmed
Houston Intercont.	Sun Sep 23, 2012	←

←=Flight 🚗=Rental Car 🏨=Hotel ⬇️=Ground

Questions? Missing a trip? Contact [Travel Services](#)

**MY ACTIONS**

2 items require PL approval in IPRM Clarity

Annual Security Refresher course is incomplete

Current as of 7:59 AM [refresh data](#)

**MY LINKS**

EEV
\$
P&D
🔄
🖥️

[new phonebook on info](#)

[Mway intermin perf mgt system](#)

[Tech Stature page](#)

[CI&T Mitre Way](#)

[infoVis visualization - use firefox](#)

[MIC](#)

[Handshake metrics, firefox only](#)

[Project Information Site](#)

[Listserv summary stats](#)



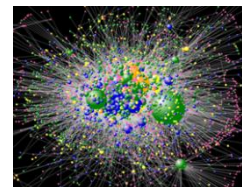
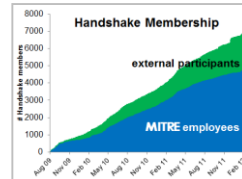
# Longitudinal Evaluation Methodology

2010

... 2011 ...

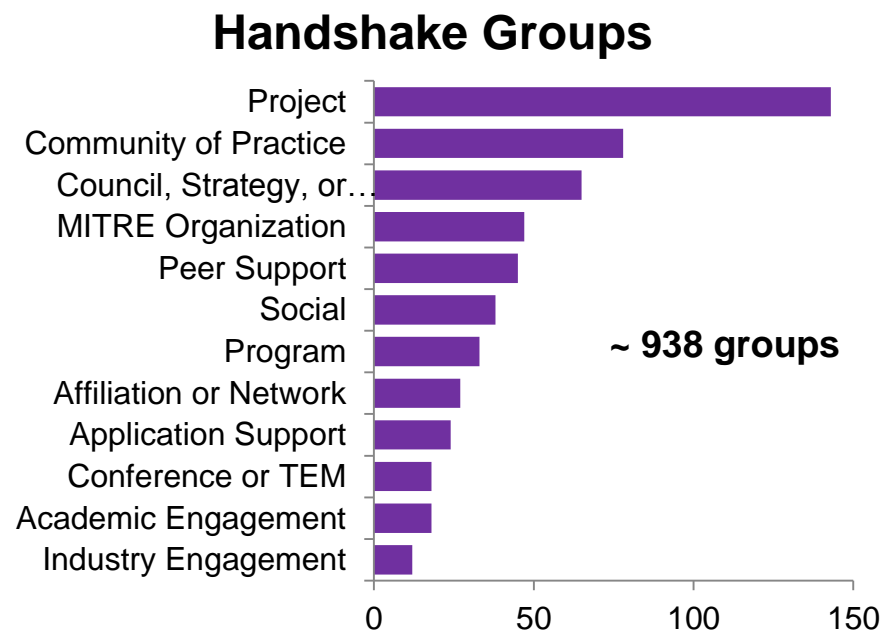
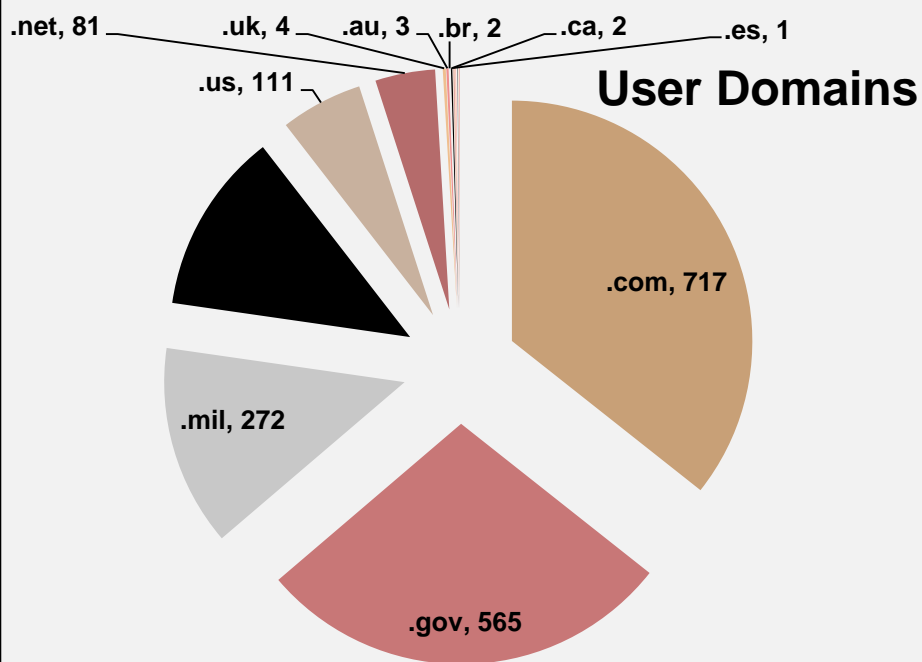
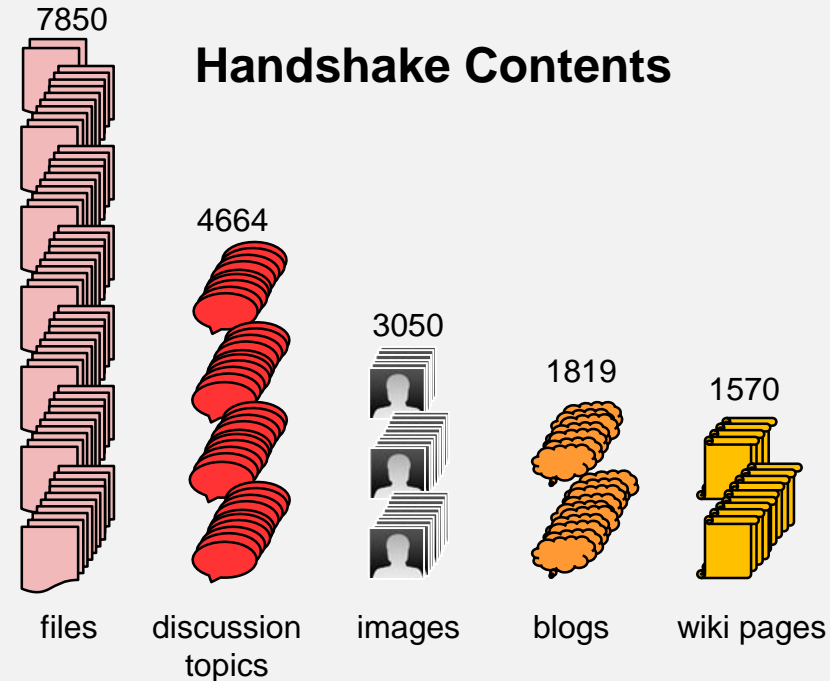
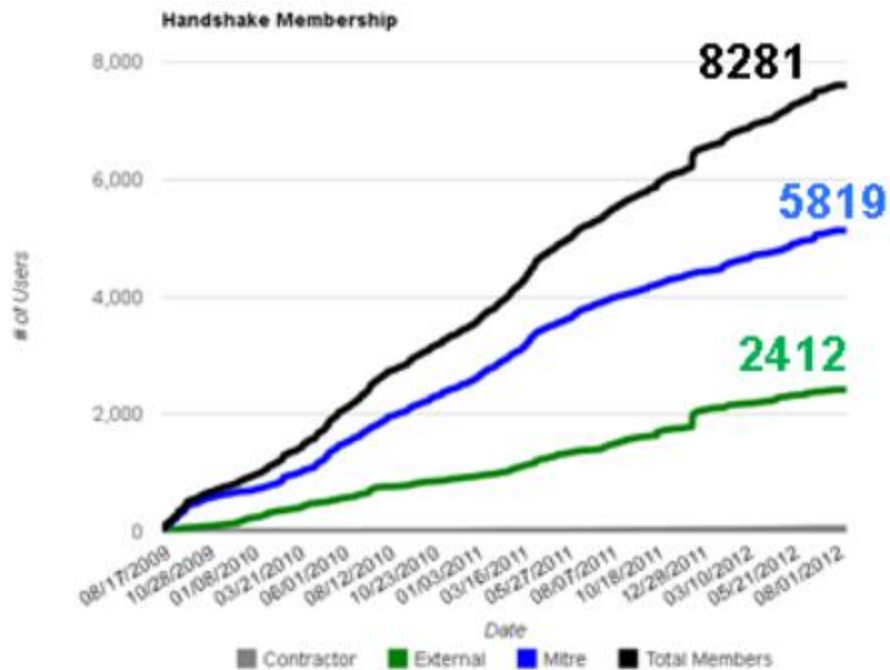
2012 ....

- Instrument the platform for activity and social demographics over time
- Usage metrics reporting
- Handshake value survey
- Social and intellectual capital survey baseline
- Use case studies, over time
- Anecdotal stories from end users
- Visualization of key networks over time



Hypothesized that business networking tool use:

- **Social capital**
  - Reinforces existing business connections
  - Fosters development of new business connections (enhancing innovative behavior)
  - Expands access to technical/domain expertise (internally and externally)
- **Intellectual capital**
  - Increases staff's awareness of emerging technology and new industry trends
  - Exposes staff to new and innovative ideas
- **Ability to collaborate** more effectively
  - Across distributed project teams – span distances
  - With MITRE's partners and other stakeholders
- **Crowd sourcing**



# Case Study Interviews

- 63 interviews with internal and external members of Handshake, face-to-face or on phone
- Interviewers followed loose script to engage participants in open-ended questioning
- Focus of interview was on perceived benefits from participating in Handshake groups

## Perceived Benefits

- Facilitates cross-organizational communication and collaboration
- Improves situation awareness of critical project information
- Consolidates multiple types of information in a single location
- Enables crowd-sourced support for innovative ideas and product features
- Helps expand and strengthen business relationships
- Enhances product quality and team productivity



# Interview Results: Perceived Benefits

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  - Improves situation awareness of critical project information
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  - **Enables crowd-sourced support for innovative ideas and product features**
  - Helps expand and strengthen business relationships
  - Enhances product quality and team productivity
- *Having [application users] talk to each other has value to the product team. [It] helps develop **more polished software faster and better**.* – Application Developer
  - *These types of discussions opened up team members' minds to alternative designs and solutions, **improving the product and changing their thinking**.* – Application Developer

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- **Helps expand and strengthen business relationships**
- Enhances product quality and team productivity
  - *There is something about seeing the photos that makes you feel closer to the group... **it motivates you** [to contribute] if you see the pictures. – Senior MITRE Manager*
  - *The relationship building that Handshake permits seems to be richer than what you find on ListServ... **helping solidify relationships**... Now at a conference, we recognize each other and can talk. – External participant*

# Interview Results: Perceived Benefits

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- Improves situation awareness of critical project information
- Consolidates multiple types of information in a single location
- Enables crowd-sourced support for innovative ideas and product features
- Helps expand and strengthen business relationships
- **Enhances product quality and team productivity**
  - *It definitely **improved the quality of the products** because you have instant feedback [about a design feature].* – Customer team member
  - *Handshake helped **reduce the number of iterations** we had to go through to get to the final product. It would have taken much longer, many more iterations without it.* – MITRE member of cross organizational project
  - *Handshake **saved me lots of time** because, at any given time, I knew what was going on in the project.* – Customer Program Manager

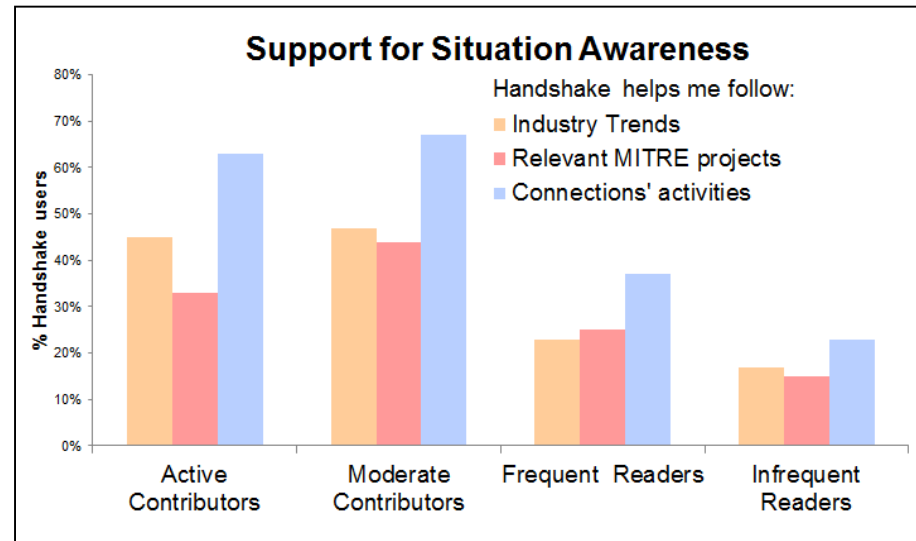
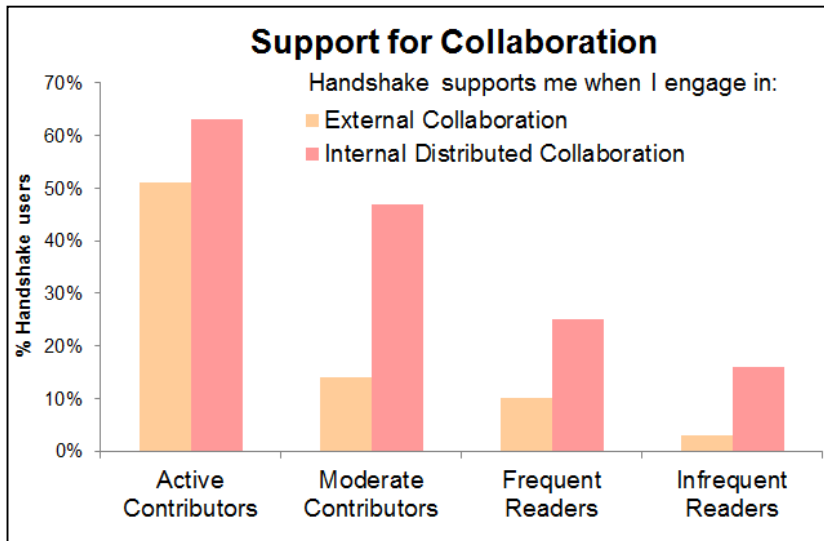
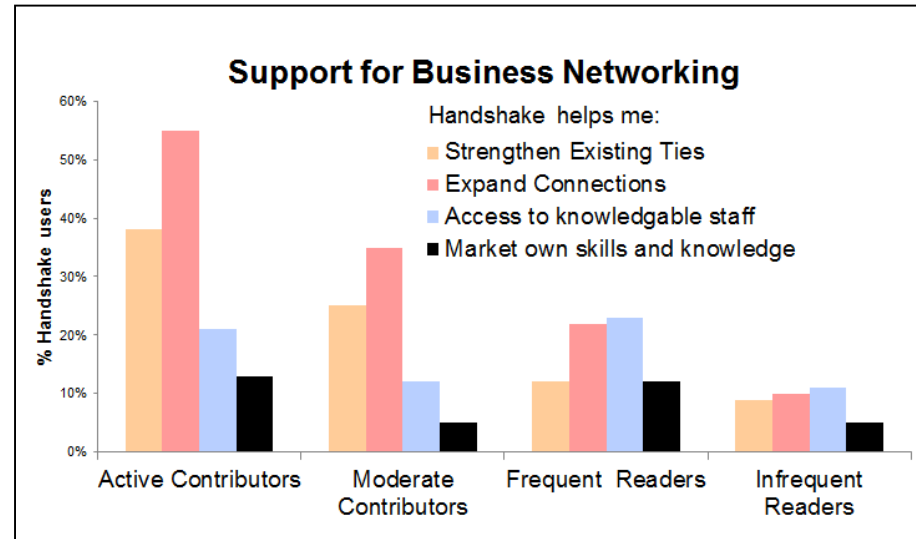
# Handshake Value Survey

- Survey was designed based on input from interviews
- Survey was sent to all 4600 MITRE Handshake members
- Survey construct
  - 18 Likert-scale statements on Handshake usefulness in:
    - Supporting collaboration
    - Strengthening social connections
    - Fostering situation awareness
    - Facilitating management of knowledge assets
    - Enhancing productivity
  - 4 open-ended questions pertaining to:
    - Overall value of Handshake to their work
    - Value of specific Handshake groups
    - Barriers to Handshake adoption
    - Suggested improvements

# Survey Analysis Results

354 respondents

- **Active contributors realize more benefits**
- **Even consumers, however, report benefits**



# Handshake Uses

## MITRE Organizations

MITRE  
It's almost here...are you ready?

MVP

YIN  
your info now

**Projects**

MITRE  
OlinSCOPE

Carnegie Mellon

BOSTON UNIVERSITY  
FERRIS STATE

**Academic Engagement**

BSSC  
Boston Ski & Sports Club

**Social**

Project Pages my MII

SOHO  
A new way for teleworkers to connect to MITRE

Handshake User Support

**Application Support**

Knowledge Cafe

Gartner SYMPOSIUM ITXPO<sup>®</sup>

MITRE FC TEM  
26 May 2010

**Event**

NLP-HLT  
NATURAL LANGUAGE PROCESSING  
HUMAN LANGUAGE TECHNOLOGY

elgg.

NCES & .NET

Scala

opensocial

SOA Attributes - early results

**Communities of Practice**

Grassroots

ANDROID

Getting Things Done

The Art of Stress-Free Productivity

David Allen

**Peer Support**

MITRE Student Program

**Affiliation or Network**

**Industry Engagement**

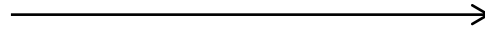


# Interesting Uses of Handshake

## MITRE Alumni



**Crowd sourcing  
identification of  
people in old photos**



## That was...[PEOPLE] Album 17

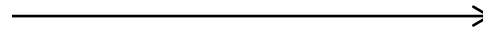
*Identify the WHO, WHAT and WHERE in these photos! Just click on the image, enter your comments, and click Save! All images © The MITRE Corporation. Please indicate where people are located in group photos (e.g. front row, third from right, white shirt).*



## MITRE3.0



**Discussion lead to a  
grass-roots organized  
science fair!**



**Group with  
mission users  
in field**

**Less than 24 hr turn  
around time for mods  
to mobile apps.**



# Interesting Uses of Handshake

## Social Media



**Request for take aways from Enterprise 2.0 leads to high-level sponsor commenting on briefing; people we didn't know were at conference join in!**

→  
**Participants are self-identified**

Several hallway conversations suggested that the vendors and pa the wide range of disciplines and resources available to / needed implementations. I can't help but think about the same aspect of management.

Excellent presentation...very interesting.

## MITRE/Customer Team



**Distributed team**  
**Dynamic staffing**  
**Aggressive timeline for deliverables**  
**Constant communication/sharing**

→

“At any given time, I knew what each member of the group was thinking, planning, or doing.”

“Handshake was extremely effective in resolving issues as they occurred, disseminating information, and meeting deliverable deadlines. The importance of Handshake’s capabilities was magnified under the aggressive schedule and tight time constraints of the project.”

## Self-Joining Groups



**Communities of Practice**  
**Affiliations**  
**Peer Support**  
**Social Groups**

→

“I find it refreshingly open in the sense that people are asking questions and posting ideas.”

“I really like the inclusiveness of it. I like the different perspectives. Each company comes with different culture as well as individuals.”

# Recent Use Cases

## “Colorado Springs Fire Crisis Response Support”

### “Transparent Engineering”

**MyMII Intranet Portal**  
community on Handshake

226 members, 65% contributing

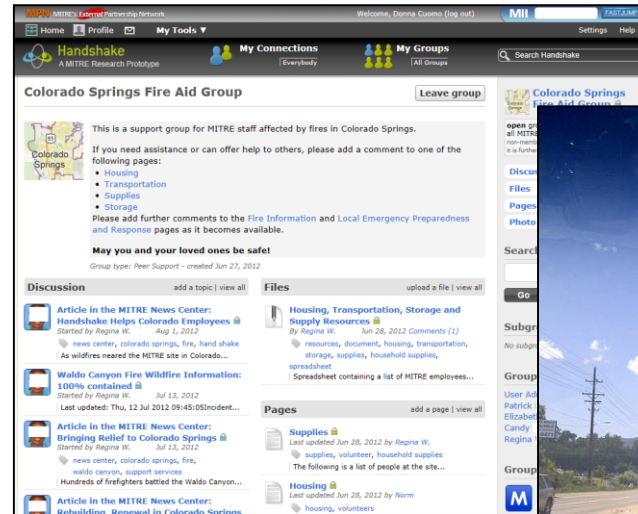
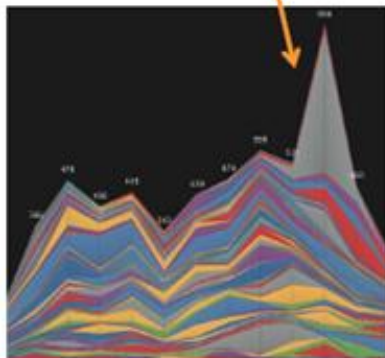
84 discussions, 636 comments

**TRS Timecard**  
community on Handshake

231 members, 45% contributing

128 discussions, 185 comments

biggest activity “spike”



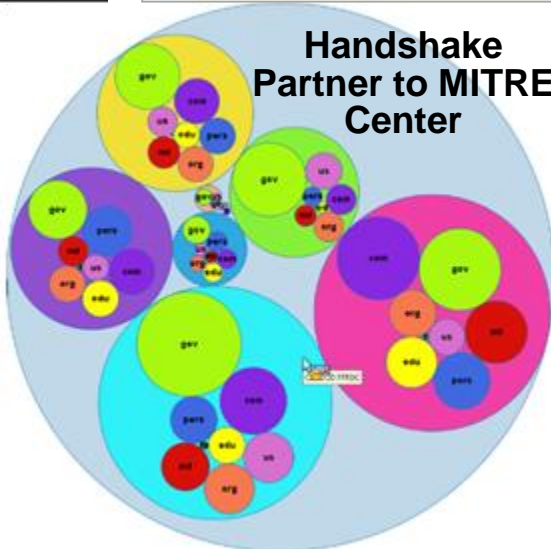
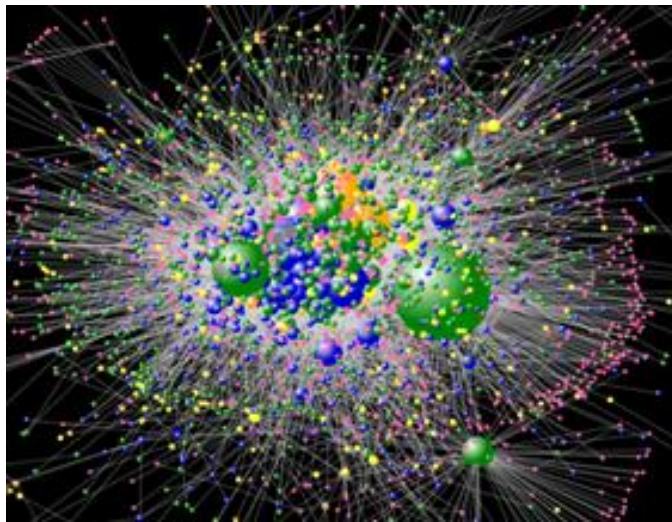
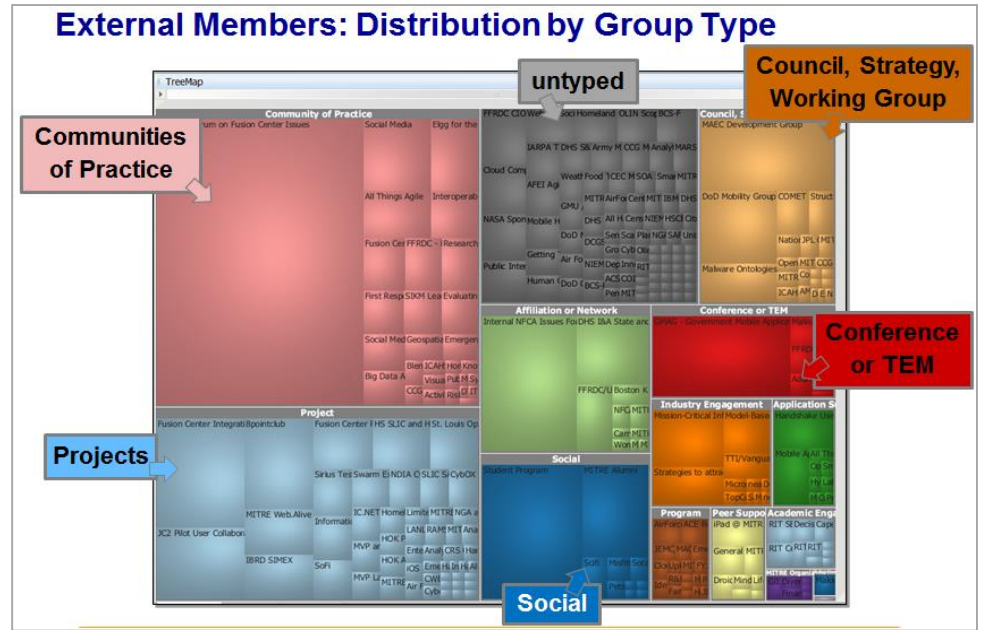
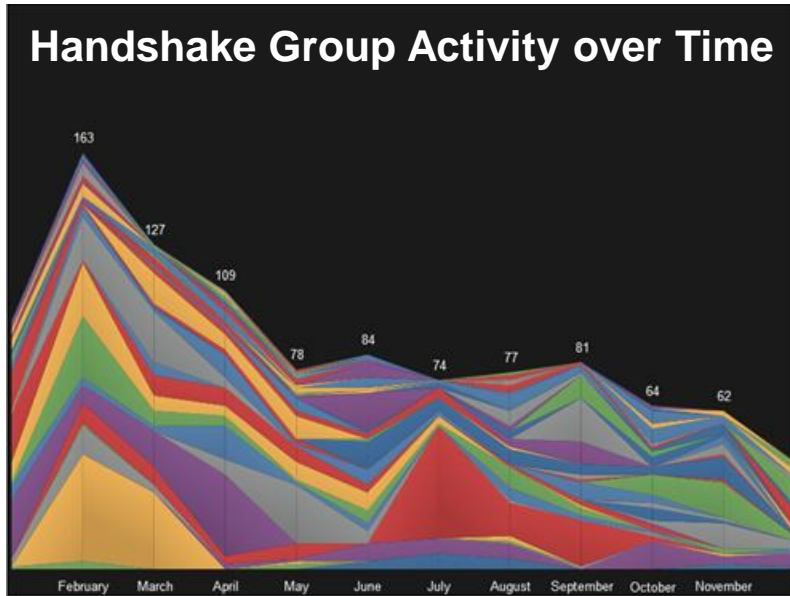
**“The quick set up and operational support Handshake provided was very valuable... We could keep a wide audience informed about evacuations etc without risking leaving anyone out.” - COS Site Leader**

**“You can do more on Handshake, such as upload photos and maps, and categorize things - COS HR**

**“It was a great meeting place,” she says. “For the folks who were being evacuated, it was a comfort, knowing they could go to one place for information on who could house them or their pets or horses, without having to go through tons of emails. - COS Office Coordinator**



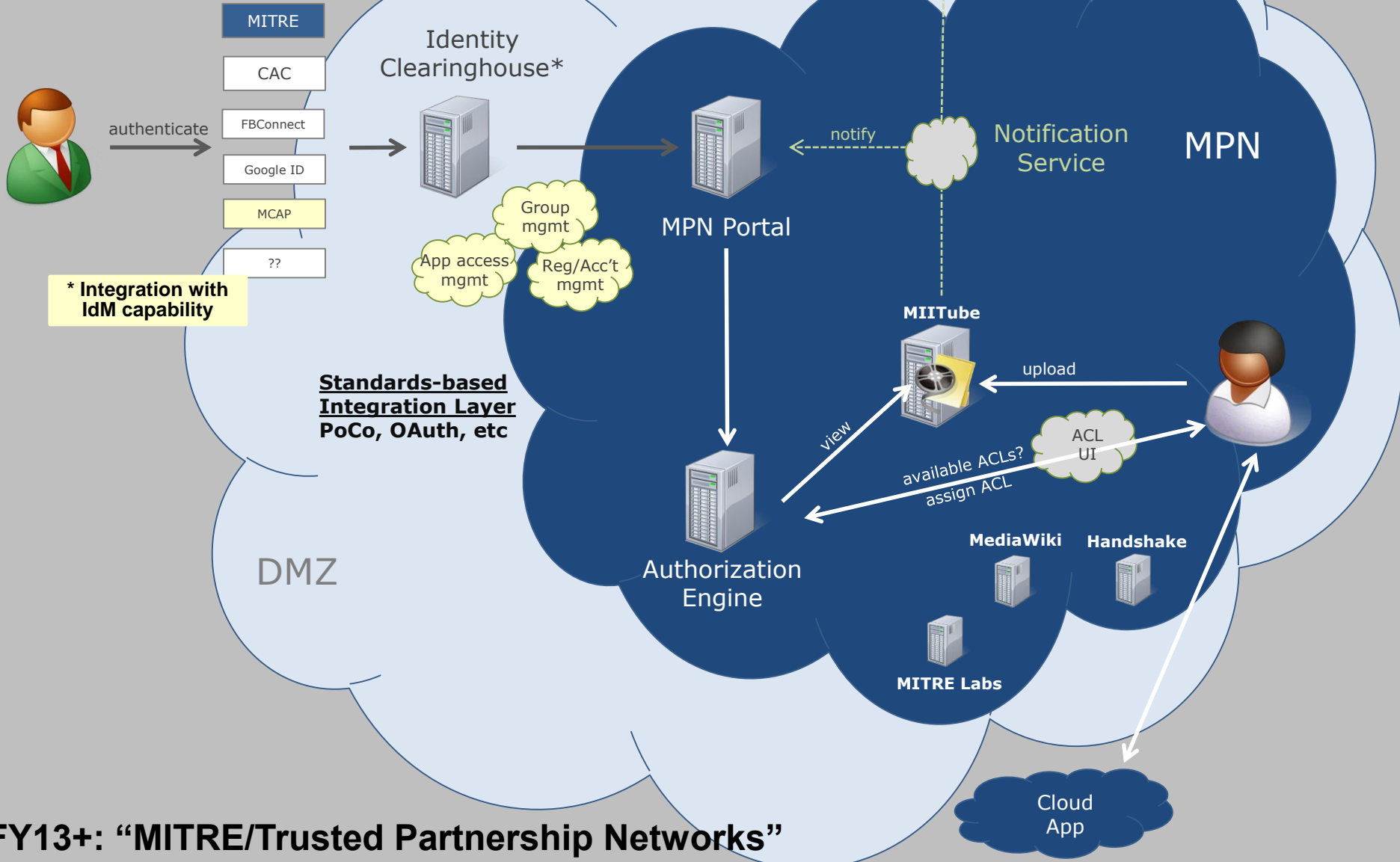
# Visualizations: Informing Insights into Usage, Behavior, and Relationships



Internet

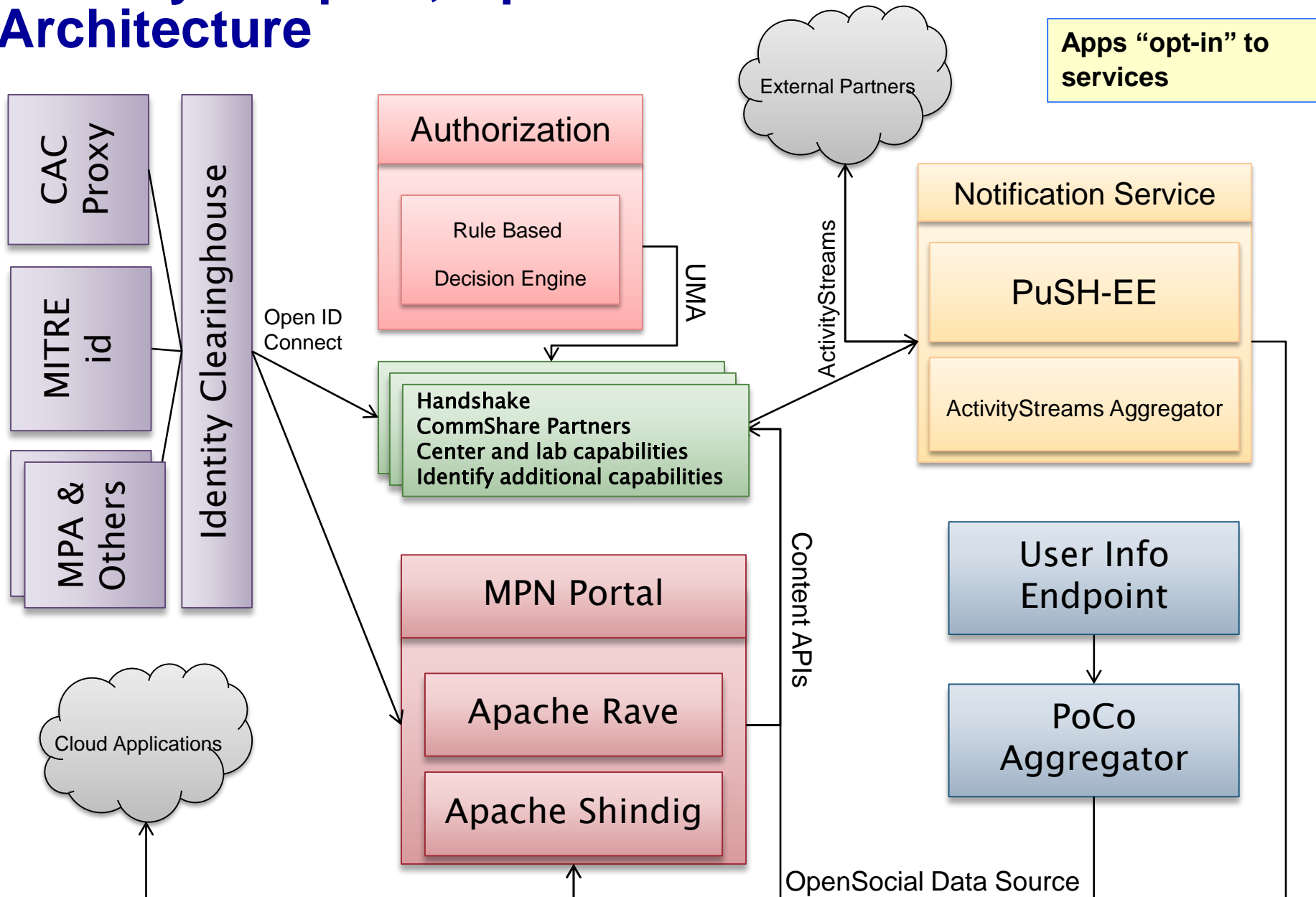
External Partner Orgs (JPL, etc)

Gov't Cloud (DISA, etc)



FY13+: "MITRE/Trusted Partnership Networks"

# Loosely Coupled, Open Standards-Based Architecture





# MITRE Partnership Network Vision

Attribute-based Rules Engine

- Org
- Credential
- Group
- Friend of
- ...

# Take Aways

- **Think about the networks that you want to build in your enterprise and across the extended enterprise**
  - What goals do you have for them?
  - What would help sustain them?
- **What processes do you have today that would benefit from being “social-enabled”?**
  - E.g., Sponsors invited into research strategy prioritization, innovation research program process, early responders, internal strategy discussions, crowd-source supported products...
  - It’s a “process/outcome discussion”, not a “tool” discussion
  - Is “community” integrated with your content strategy?
- **Do not read/post to the same people all the time**
  - Connecting with a non-redundant set of people is more valuable

# Take Aways

- **Develop on-boarding work & human resource development practices that focus not only on project success, but also relationship building**
  - Pair newcomers with “brokers” in a mentoring relationship
  - Design initial projects with not only success in mind, but also relationship building as an outcome
  - Performance reviews should include not only what have you accomplished but who have you met and built a relationship with
  - Groom future brokers through job rotation
  - Recommend communities new employees should join
- **Make employees aware of the social tools and the potential benefits**
  - Communicate the value stories and successes of others
  - Train community stewards on successful techniques for community and network management
- **Value social networking engagements (posts, status updates, information sharing, starting interesting discussions)**

# Questions?

More information available at:

[http://www.mitre.org/work/info\\_tech/software\\_collaboration/](http://www.mitre.org/work/info_tech/software_collaboration/)

Contact us

Donna Cuomo [dcuomo@mitre.org](mailto:dcuomo@mitre.org)