MITRE's Knowledge-Driven Enterprise Strategy

June, 2015



Outline

- Brief overview of MITRE
- IT Portfolio Management Model
 - Governance, Services Portfolio, Strategic Planning
 - Positioning of KM-related functions
- MITRE KDE strategic plan
- Our Knowledge Systems
 - My MII
 - KM in the Flow Portfolio and Project Pages
 - People/Technical Stature pages
 - Organization pages
 - Product Libraries
 - MII Discover (Faceted search, data architecture)



Established to Serve the Public Interest

established 1958

not-for-profit

conflict-free environment

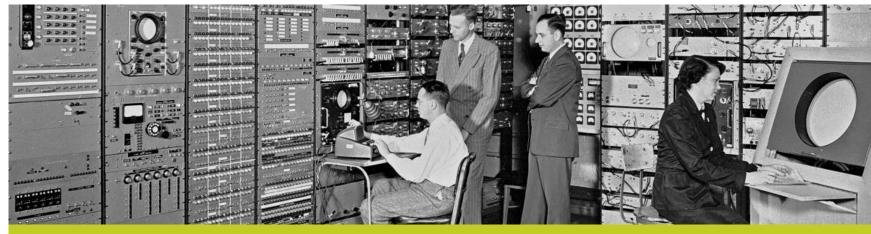
science & technology



Part of the ecosystem of federal research centers



A Long and Distinguished History



1958

Spirit of innovation and a deep understanding of systems engineering

Present











Today We Operate Seven FFRDCs

Our customers benefit from our breadth of experience



CMS
Alliance to
Modernize
Healthcare

National Security Engineering Center





Center for Enterprise Modernization

Center for Advanced Aviation System Development





Judiciary
Engineering
and
Modernization
Center

Homeland Security Systems Engineering and Development Institute





National
Cybersecurity
Center of
Excellence



Bedford, Mass.

McLean, Va.

Our Employees

7,300 employees

67% advanced degrees

25 average years experience

12 years average tenure



Our employees have a passion for public service

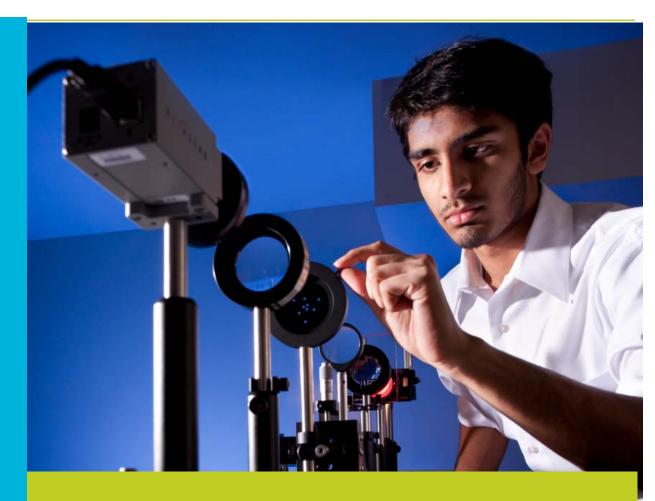
Our Capabilities

critical problem solving

science & mathematics

social sciences

systems **engineering**



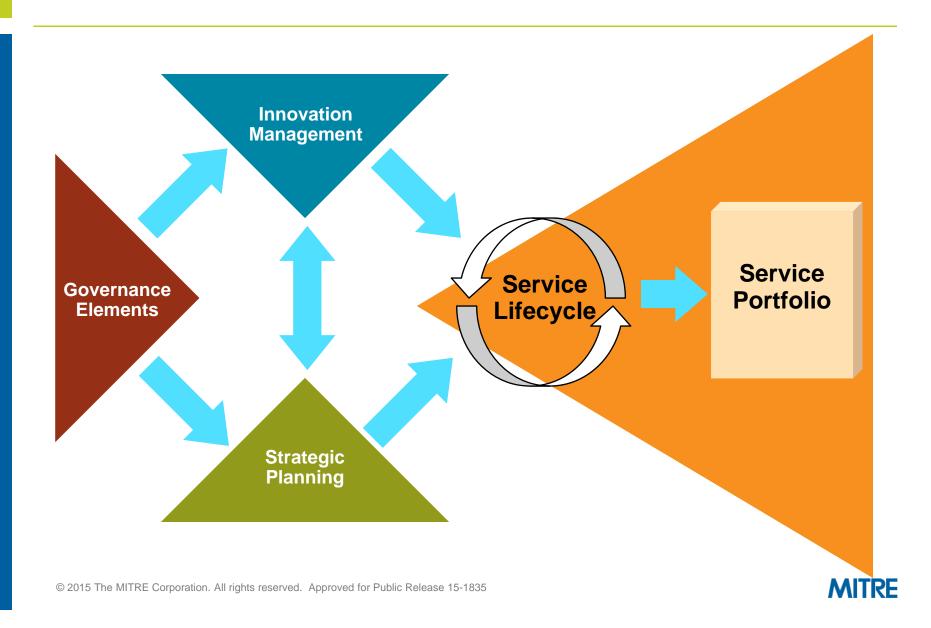
Focus on innovation, collaboration, and results



IT Governance and Service Portfolio



CI&T Management Model



Service Management & Service Portfolio

Service
Management &
Portfolio

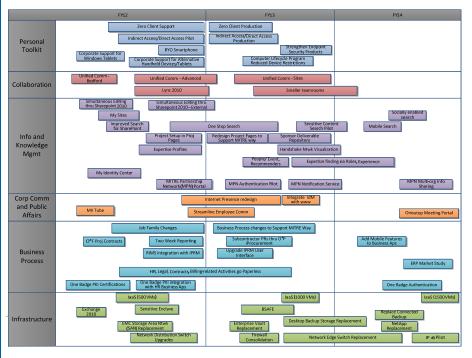
- Services organized around the value to the customer
- Individual changes are evaluated and implemented with an understanding of the overall impact on a service





Strategic Planning

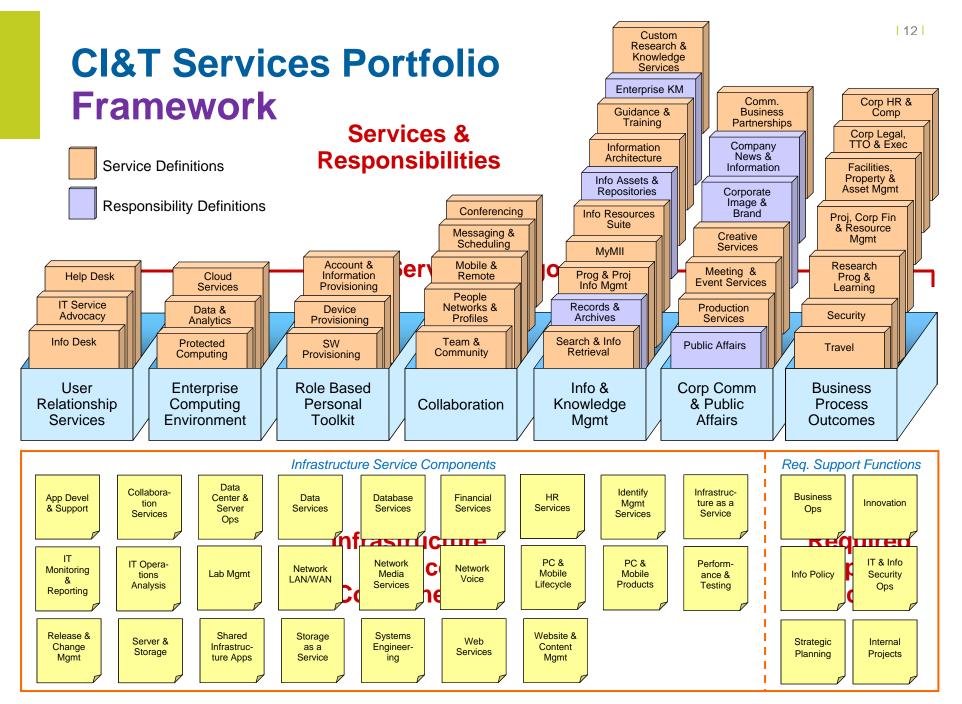




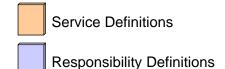
- Near and long-term investment plans
- Rolling, executable roadmaps
- Service cost management
- Multi-year financial/resource planning
- Technical, financial, and resource interdependencies

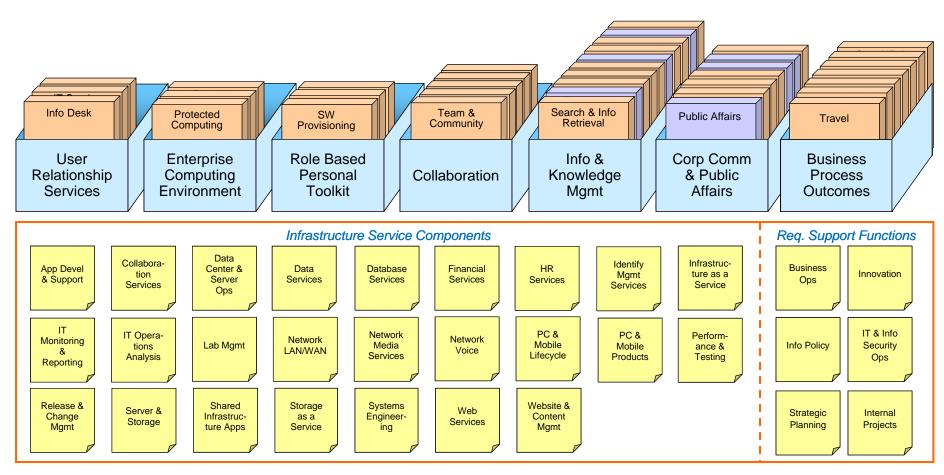






CI&T Services Portfolio Framework





MITRE's Knowledge Strategy and Knowledge Systems



CI&T Structure

Innovation & Technology

- Innovation Program
- CTO/IR&D Partnership

Office of the CIO

Business Operations & Strategic Planning

- Strategic Planning
- · Financial Management
- Financial Modeling & Analysis
- Image & Brand Mgmt

Information Systems, Infrastructure, & Services

- Infrastructure Systems & Security
- Networks & Communications
- Unified Communications
- Enterprise Business Apps
- Service Assurance
- Systems Analysis & Test
- Database Services & Change Control Management
- Infrastructure as a Service

Knowledge, Information & Collaboration Solutions

- Collaboration Services
- MII Information Portal
- MITRE Partnership Network
- · Digital Library & Info Research
- Integrated Messaging & Calendaring
- Desktop, Mobile & Remote Access Services
- · Knowledge, Content & Archives
- · Discovery & Integration
- Knowledge Worker Innovation

Enterprise Technical Computing

- Centralized Technical Computing
- Enterprise Computing Environment (ECE)
- · IaaS, StaaS, Hadoop
- FISMA
- External Cloud
- Lab Support (Class/Unclass)
- Analytic Tools (DAE)

Corporate Communications & Public Affairs

- Image & Brand Mgmt
- External Affairs
- External Communications
- Employee Communications
- Meeting & Event Services
- Company Publications
- Creative Services
- Audio/Visual Services -

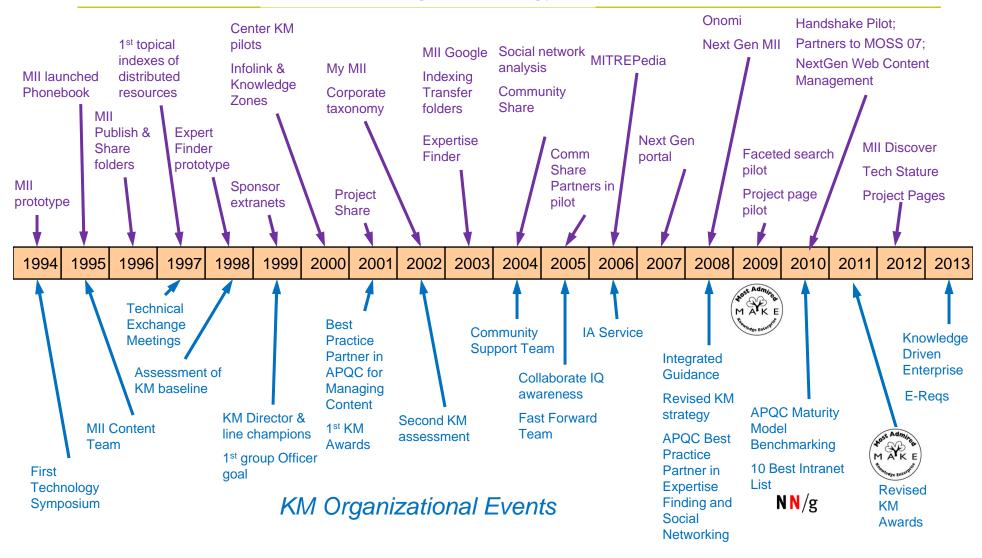
Knowledge Information and Collaboration

... Arming the Knowledge Worker



KM History at MITRE

KM Supporting Technology





Knowledge-Driven Enterprise (KDE) Strategy



Desired Transformations

From	То
MITRE staff as our users	MITRE and partners as our users and key collaborators
Email as our primary external collaboration and work product delivery platform	Support more sophisticated collaboration with partners through coengineering, networking, and electronic access to lab demos, resources and processes.
MITRE as system host	MITRE as a participant and/or trusted third party in multi- organizational/multi-platform environments. Agility and velocity.
Managing knowledge artifacts/products	Comprehensive, "in-flow" KM support of key outcome-driven operational and socio-collaborative processes.
Inconsistent stewardship of key resources and capabilities	Comprehensive, appropriate-level, automated-where-possible, stewardship of key resources and capabilities
Application-level information architecture	Enterprise information architecture . Primary and secondary use is designed into information flows.
User initiated retrieval, keyword search	Users leverage a rich , unified , knowledge base . Anticipatory knowledge delivery via recommenders, actionable intelligence, question answering, "dots connected"
Activity/usage based metrics, lack of work program insight, KM survey	Healthy information that drives and informs our decisions, provide insight
One way broadcast and publication of information	Social-enabled processes and peer production as richest source of value creation
Open MII, closed enclaves for sensitive information	Systems support information of varying sensitivity levels as seamlessly as possible. Support for anywhere , anytime access.



The Knowledge-Driven Enterprise



1 - KM in the Workflow

Design a knowledge infrastructure to enable end-toend integrated process support with KM in the workflow.

- Integrated systems
- Capture of high value products in the flow
- Just-in-time presentation of templates, best practices, targeted information

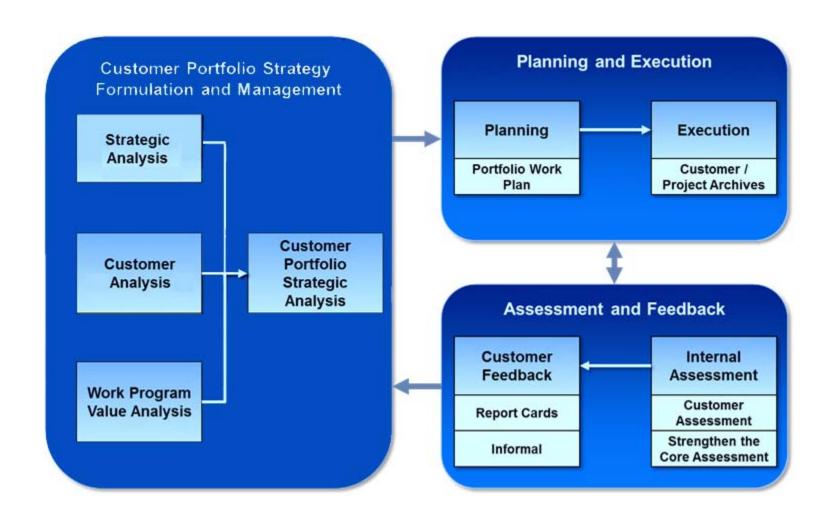


KM tied to strategy and outcomes



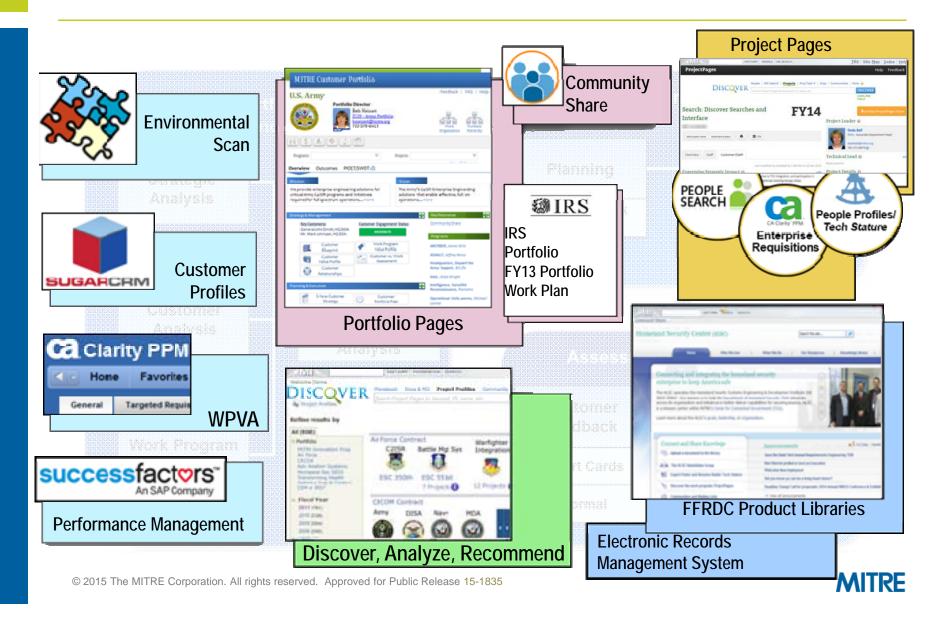


Corporate Change to Strategic, Outcome-Based Work Program Management





FY13-FY14: KDE for the MITRE Way Integrated Systems with KM in the Flow

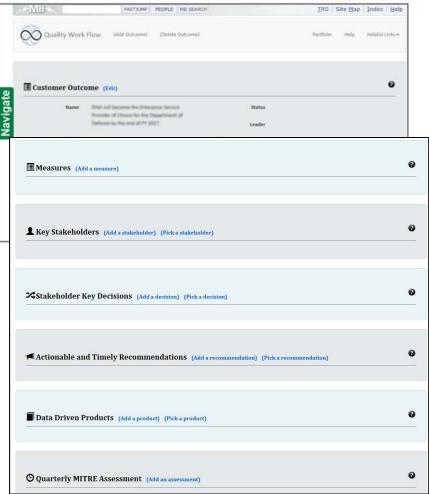


KDE



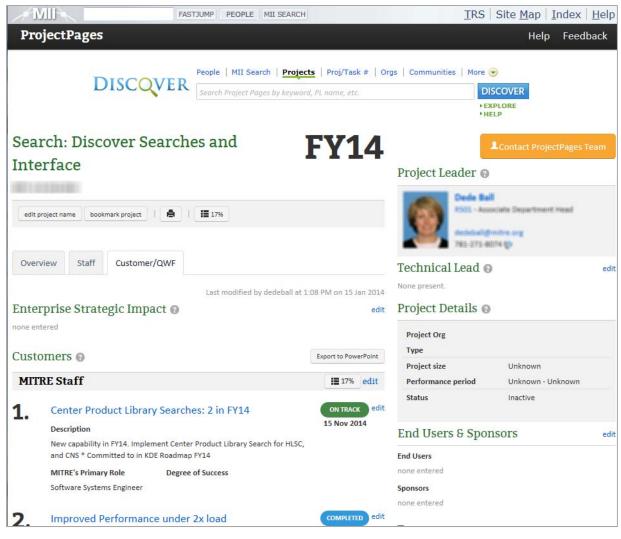
Portfolio Pages - Strategic, Outcome-Based Work Program Management



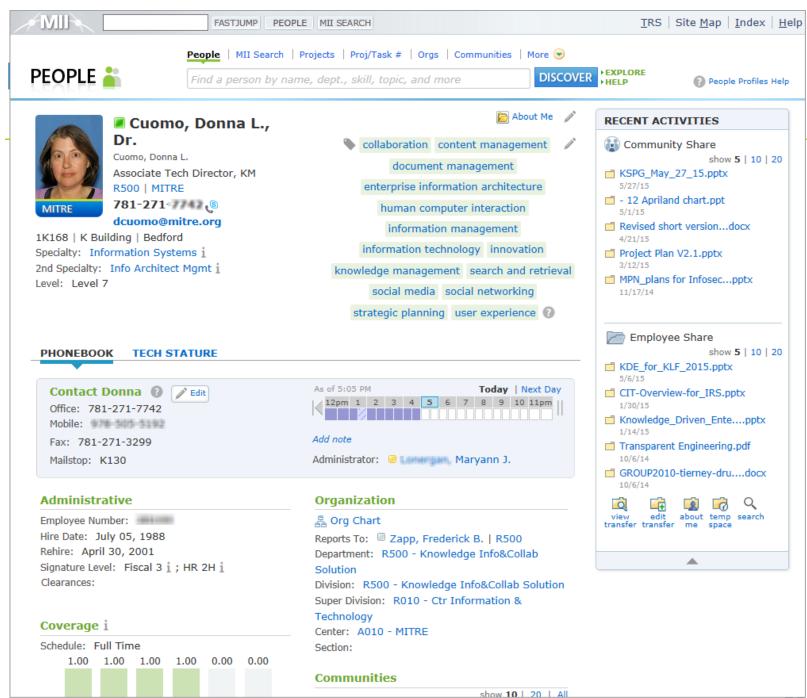




Project Pages – Yearly Project Plans and Outcomes







TECH STATURE PHONEBOOK

Education

Degrees

Doctorate Degree - SUNY - Buffalo HR Engineering, Industrial

Masters Degree - SUNY - Buffalo HR Engineering, Industrial

Bachelor Degree - SUNY - Buffalo HR **Engineering, Industrial**

Courses and Certificates

5/2013 Being a Trusted Advisor HR

5/2013 MITRE Way Wave 2 Sprint 5 HR

4/2013 MITRE Way: Wave 2 Sprint 4 HR

2/2013 MITRE Way: Wave 2 - Sprint 2 HR

1/2013 MITRE Way: Wave 2 - Sprint 1 HR

7/2012 Sprint 4 -Resource Mgmt & Staf HR

6/2012 Sprint 2 - PEM: CVA (P1W1) HR

1 more...

Technical Activities

Prototypes

Community team sites - Community Share

MII Discover (Answers) Search - MII Discover powered by Endeca

Project Pages - Project Pages

Social bookmarking for the enteprise - onomi

Social business networking for the enterprise - Handshake

Experiences

MITRE Experience

2008 - now MIP "Information Sharing for the Extended Enterprise" Investment Area lead

> MIP Investment Area leader, Corporate Technology Integrator Currently the investment area lead for our Information Sharing for the Extended Enterprise (formerly Social Networking for the Enterprise) MIP investment area. This investment area has helped to provide innovative new sharing capabilities, such as Handshake, that allow MITRE to strengthen partner engagements, collaborate across organizational boundaries in a trusted way, and provide differentiated value. Our longitudinal evaluation to assess the business value of a multi-organizational sharing capability is unique within the community. Currently, we are planning new expanded capabilities for enhancing our partner engagement strategy via the MITRE Partnership Network. This includes integrating infrastructure elements such as identity, access control, a partner portal, and a common notification service, as well as new federated collaboration services and easy integration with center and project-produced capabilities.

1996 - now MII/Enterprise Knowledge Sharing and Collaboration Chief information architect/Assoc Dept Head/project leader Responsible for knowledge sharing strategic planning, design and development, enterprise information architecture, and enterprise social software strategy. I joined

Publications

Articles

1/2011 MITRE Corporation: Using Social Technologies to Get Connected Ivey Business Journal

Donaldson, Bill, Cuomo, Donna L., Dr.

3/1994 Understanding usability issues addressed by three user-system interface evaluation techniques

> Interacting with Computers volume Spring, issue 1994 Bowen, Chip, Cuomo, Donna L., Dr.

Papers

8/2011 Engagement and Participation for Knowledge Sharing and Collaboration: MITRE Case Study

APOC Conference, Houston, TX

Cuomo, Donna L., Dr., Tatalias, Jean A.

7/2011 Handshake: A Case Study for Exploring Business Networking for the Enterprise, Inside and out

HCI International 2011, Orlando, FL

Damianos, Laurie E., Cuomo, Donna L., Dr., Drozdetski, Stan A.

3/2010 MITRE Project Information Model: Improved Work Program Capture at Project Setup Time

Tech Note

Colbert, Jean D., Cuomo, Donna L., Dr., Francesca, Marie A.

1/2007 Exploring the Adoption, Utility, and Social Influences of Social Bookmarking in a Corporate Environment

40th Hawaii International International Conference on Systems Science

Cuomo, Donna L., Dr., Damianos, Laurie E., Griffith, John D., Hirst, Dave, Smallwood,

1/2007 Exploring the Adoption, Utility, and Social Influences of Social **Bookmarking in a Corporate Environment**

Hawaii International Conference on System Sciences (HICSS-40) , Hawaii Cuomo, Donna L., Dr., Damianos, Laurie

3/2006 Onomi: Social Bookmarking on a Corporate Intranet

Web 2.0 Collaborative Web Tagging Workshop

Damianos, Laurie E., Cuomo, Donna L., Dr., David Hirst, Griffith, John D., James Smallwood

2/1996 Usability Issues In Complex Government Systems

Gaithersburg, MD: NIST Special Publication 500-237 Cuomo, Donna L., Dr., Drury, Jill L., Dr.

1 more...

Presentations

12/2013 Intranet for Communicating, Collaborating, and Integrating

Cuomo, Donna L., Dr., Zapp, Frederick B. Presented at: Census Bureau, Washington, DC

10/2013 Social Business at MITRE

Cuomo, Donna L., Dr., Jacobs, Joel D.

Presented at: Boston CIO Executive Summit, Boston, MA

9/2012 Leveraging the Extended Enterprise with Social Software

Cuomo, Donna L., Dr.

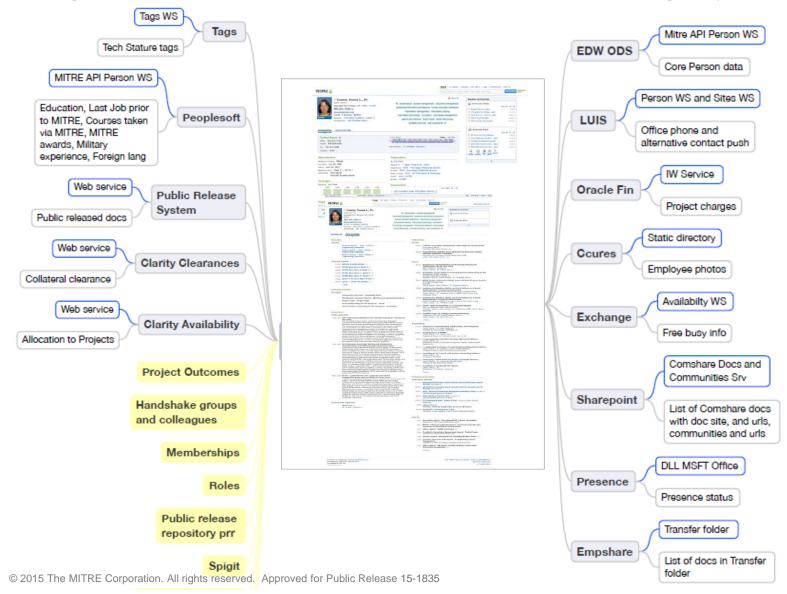
Presented at: Society of Information Management Meeting - Boston Chapter, Needham,

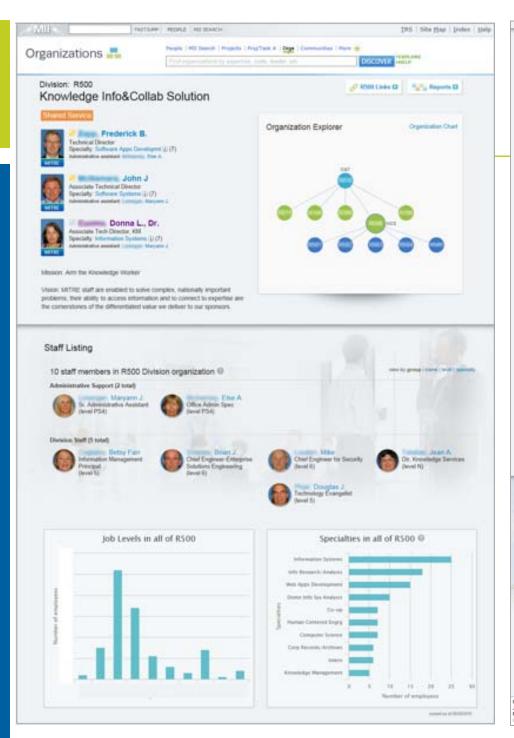
3/2012 Dongitudinal Evaluation of a Social Business Networking Platform

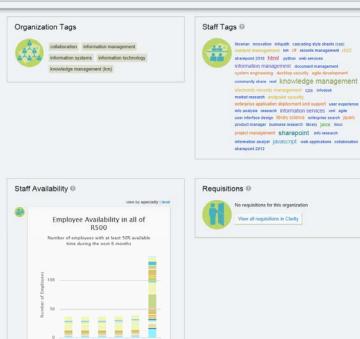
Cuomo, Donna L., Dr., Damianos, Laurie E., MITRE contributor Presented at: Babson CIMS on Enterprise Social Software

Most of the Work is Done for You

Integration across 13 of our business and knowledge systems







May Jun Jul Aug Sep Oct

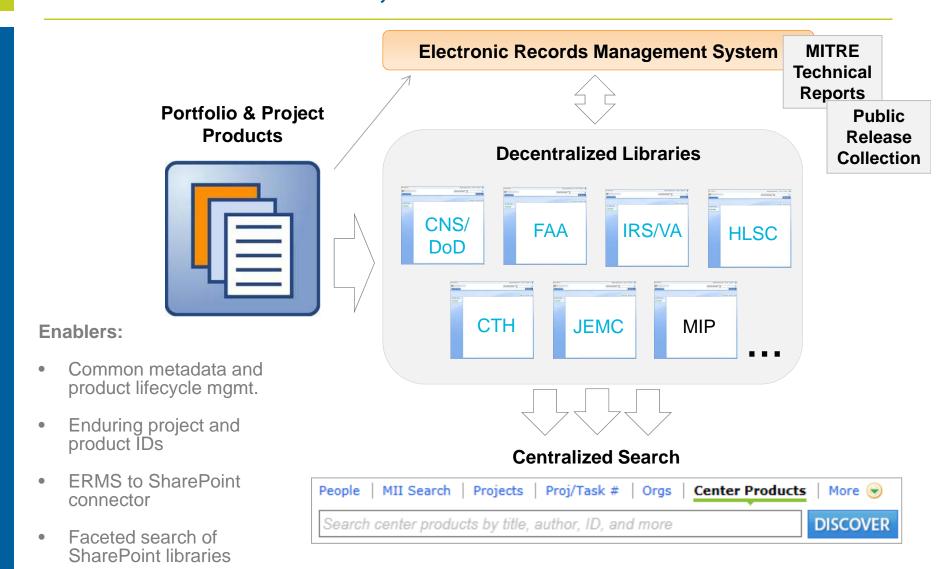
Month

Business Intelligence Co-op
Computer Science Corp Records/Archives
Crtcl Infrstrctr Prtcn Data Mining



MITRE Product Libraries Concept

Decentralized Libraries, Centralized Search

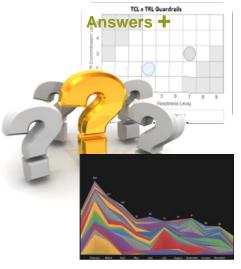




3 - Actionable Knowledge Intelligence & Resource Exploitation

Transparency of information and process, consistently leverage intellectual assets, and re-plan

- Discover and exploit relevant resources more readily
- Enhance landscape views and act-ability of information
- Awareness of what you don't know
- Decision support



Improved intelligence and resource exploitation



Efficiency in work & outcomes



What Do People Want to Know?

Project Staffing/Talent Management

- Who has these technical skills, soft skills, availability, experience, clearances, reputation...?
- Where are the gaps in needed skills?

Key Resources

Administrative gold source sites

• Project deliverables & recommendations

• Best practices & lessons learned

Technical accomplishments & papers

• Stewarded communities of practice

• Resources available for reuse

Skill Network & Behavioral Analysis

- What people, projects, communities and organizations are available in this area?
- Are they talking to each other?
- What are people doing and using?



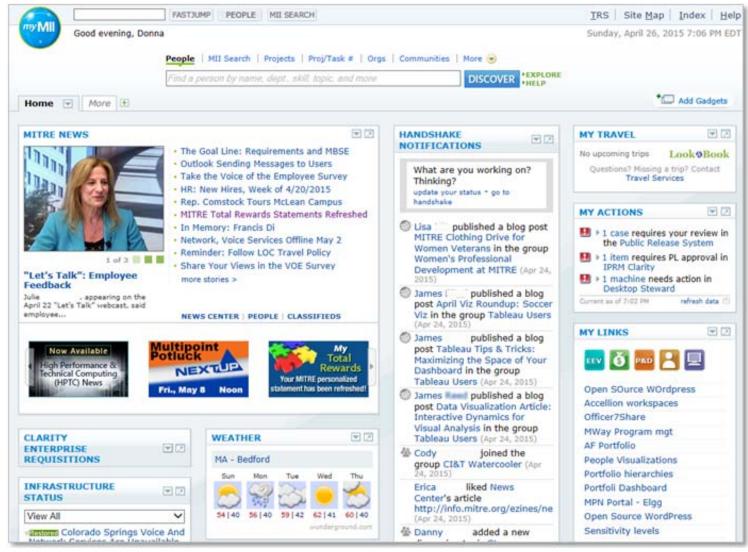
- What is the customer's portfolio & strategy?
- What is the project plan?
- Who wrote a SOW?
- Who else works with this sponsor?
- Are we delivering the outcomes?
- What existing research can be leveraged?

Technical Stature

- Which organizations have these skills?
- What accomplishments does this person have?
- Who is similar?
- What are their experiences?



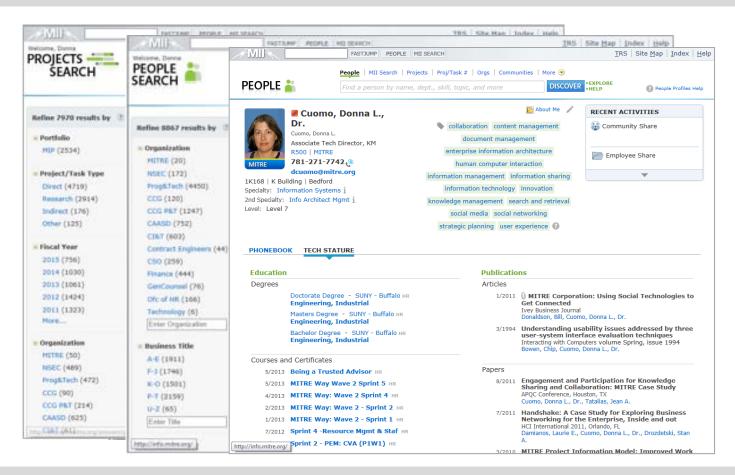
MyMII





Initial Capabilities in Faceted Search, Reporting, Query Refinement

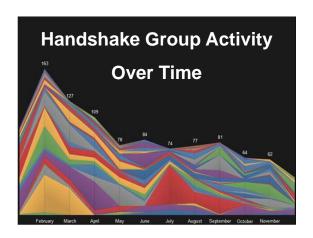
People Projects Proj #s Portfolios Communities PRR Products ...

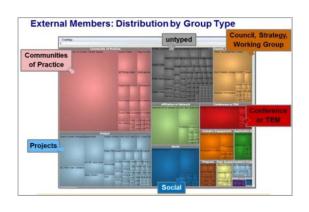


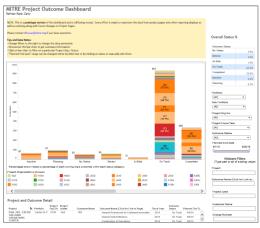
Future: New Orgs Customers Ent Regs Web Sites ...



Analytics to Inform Insights into Usage, Behavior, and Relationships







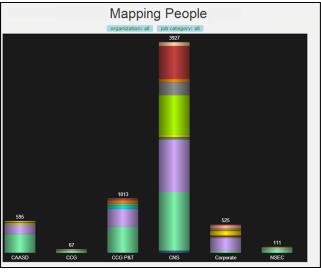
Product Count Trends by Author - All Libraries (Cikis an Authors Name in the Lagrad to Hightilight)

30

01 2010 02 2010 03 2010 04 2012 01 3013 02 2010 03 2010 04 2010 01 2014 04 2014 01 2014 01 2015 02 2015

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Product Delivery



Project Outcome Mgt.



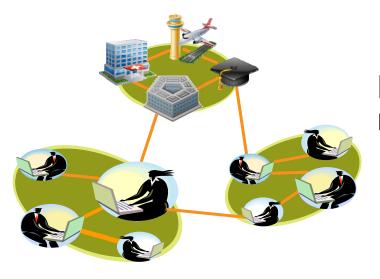
Tech Center Skill Cloud



2 - Enable the Extended Enterprise

Broaden who we interact with and increase the level of sophistication and value of these engagements.

- "Right people" involved early
- Strengthen strategic relationships
- Agility in capability delivery



Leverage the network

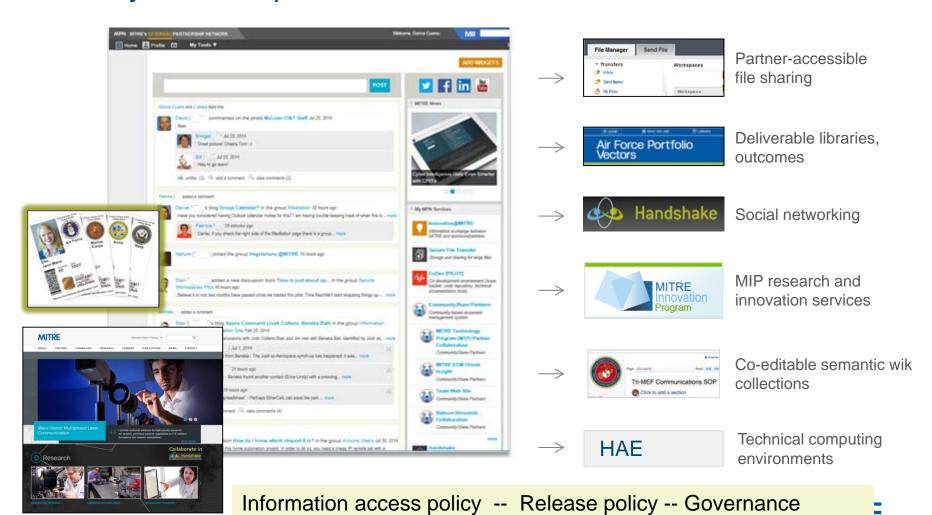


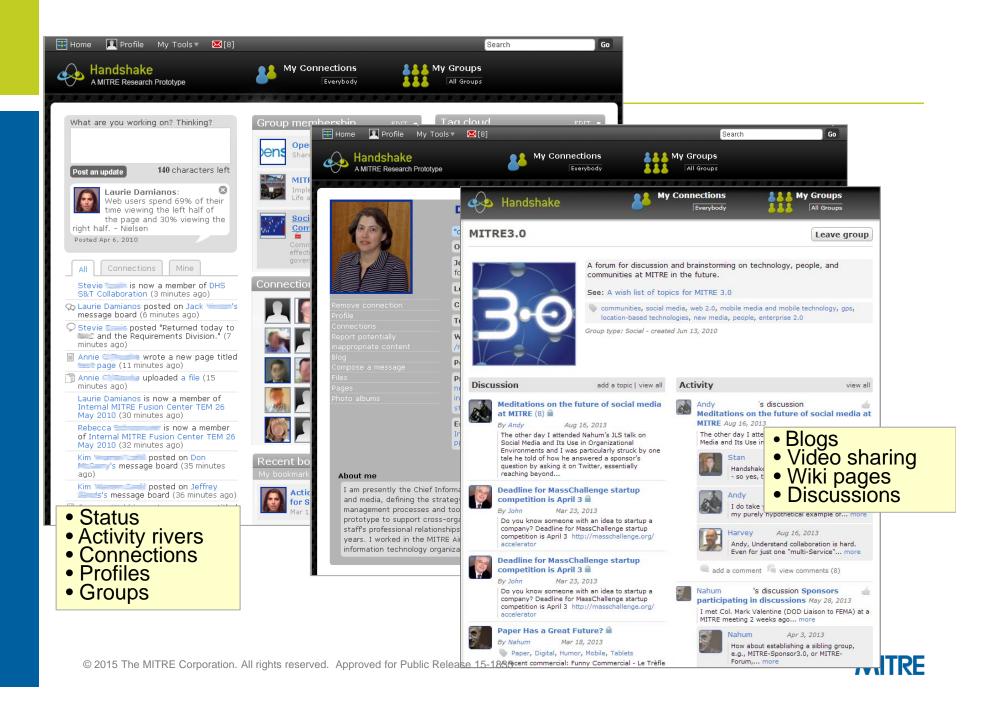
Improved products, decisions, and access



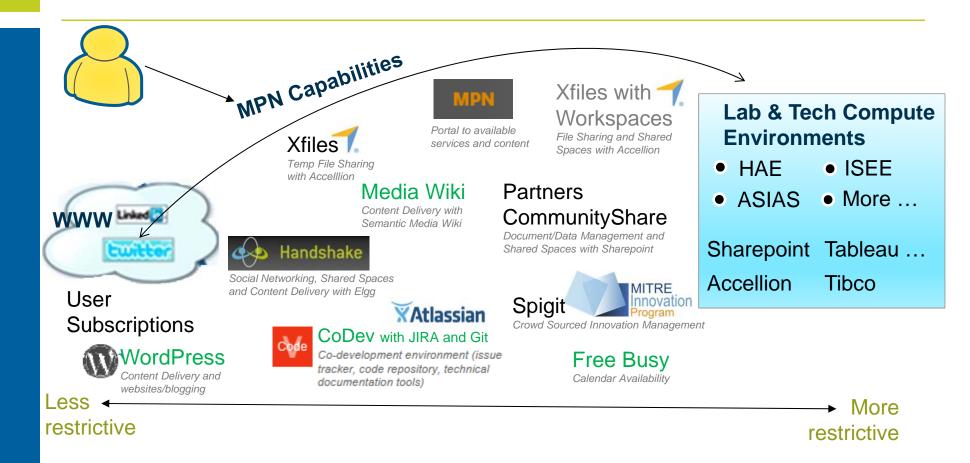
MITRE Partnership Network Vision

"A My MII-like Experience for Partners"





MITRE Partnership Network Capability Space



Identity, Account and Access Layer



MPA

Identity Management

Management: Common identity -- Invitation and account -- Groups -- Profiles

Process: Attribute-based Access control -- Activity streams -- Notification Service -- Metrics



Questions?

Contact information
Donna L. Cuomo
dcuomo@mitre.org

Fred Zapp frapp@mitre.org

Access articles and briefings on MITRE's Knowledge Driven Enterprise at:

https://publish.mitre.org/kde/

(or search for "MITRE KDE")

