



Homeland Security

“Meaningful Engagement for Information Quality”

Presenter: Glenn Norton, U.S. Citizenship and Immigration Services

MIT 2008 Information Quality Industry Symposium



Topics

- Operational Context
- System vs. Information Focus
- Engagement Model
- Lessons Learned
- Next Steps



Why was DHS Created?

*“It was not created merely to bring together different agencies under a single tent. It was created to enable these agencies to secure the homeland through joint coordinated action. Our challenge is to realize that goal to the greatest extent possible”**

Three focus areas for achieving the goal:

- Operate under a common picture of threats
- Provide active and appropriate policy response to those threats
- Ensure unified execution of Component operations to carry out the mission

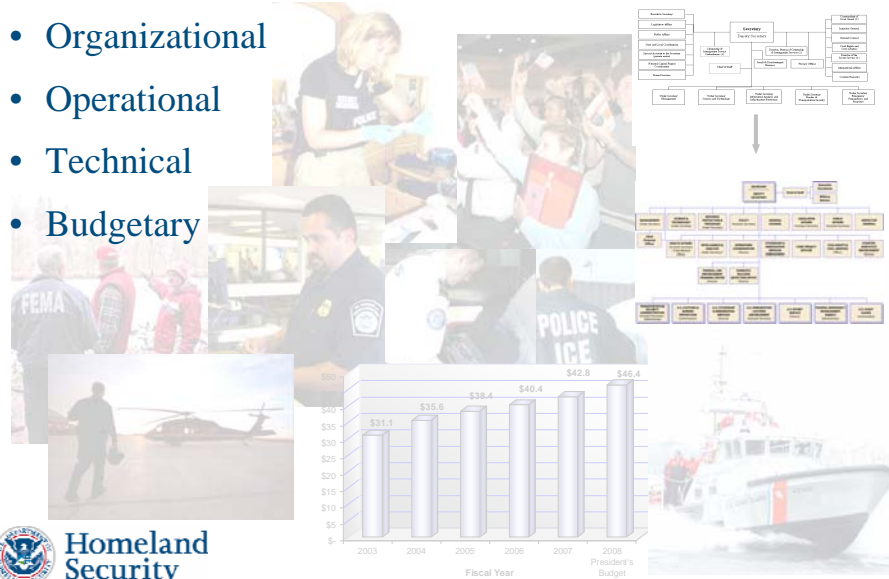
Success in each of these areas depends on knowing what information is available and appropriately sharing the right information with the right people at the right time

*April 20, 2005 Statement for the Record by Secretary Chertoff before the Senate Subcommittee on Homeland Security



Complex Environment

- Organizational
- Operational
- Technical
- Budgetary

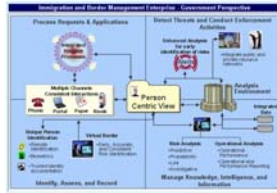
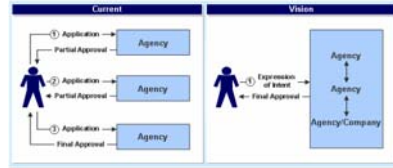


Evolving Vision

Changing Vision of the Immigration & Border Management Enterprise



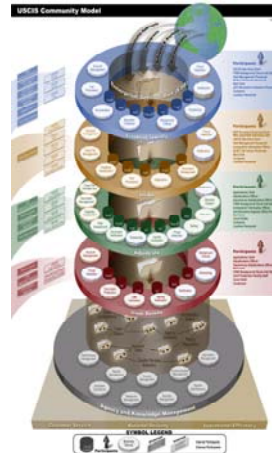
- Dept. of Homeland Security
 - Customs & Border Protection
 - Immigration & Customs Enforcement
 - Citizenship & Immigration Services
 - US-VISIT
- Dept. of State
- Dept. of Justice
- Dept. of Transportation
- Dept. of Commerce
- State and local governments
- Foreign governments



Transforming Operations

U.S. Citizenship & Immigration Services is embarking on an enterprise-wide transformation effort that will transition the Agency from a fragmented, paper-based filing system to a centralized and consolidated electronic environment. This effort will require re-engineering agency-wide business processes and updating information technology systems to provide new capabilities to our employees and our customers.

The USCIS Transformation Program Office is charged with facilitating the development of a flexible and efficient organizational business model supported by an integrated technical environment for both its customers and employees.



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Time Travelers and the Walking Dead

Decisions are being made about the information in our systems.
Who is making them?


Developers make an assumption and time travel is possible
System migration identifies deceased on vacation

How can we ensure the information in our systems fit for use?



Five Business Questions that Must be Asked



1. How do I find the best source of information available to meet my specific business needs?
2. Is the information I create in my business also needed by other organizations or lines of business (within DHS, and ultimately outside of DHS as well)?
3. How can I have confidence that the information I receive from others is actionable for my business purposes?
4. How can I be sure that the information I provide to others will be construed correctly and handled appropriately?
5. How can I best leverage available resources to obtain optimal business value from data and information assets?



Information Management Environment

- The ability of an organization to answer the five business questions establishes the context and maturity of the organization’s data and information management environment
- Lack of answers indicate a high probability that mission goals are not being effectively attained

Who do we ask?
Who can correctly answer?

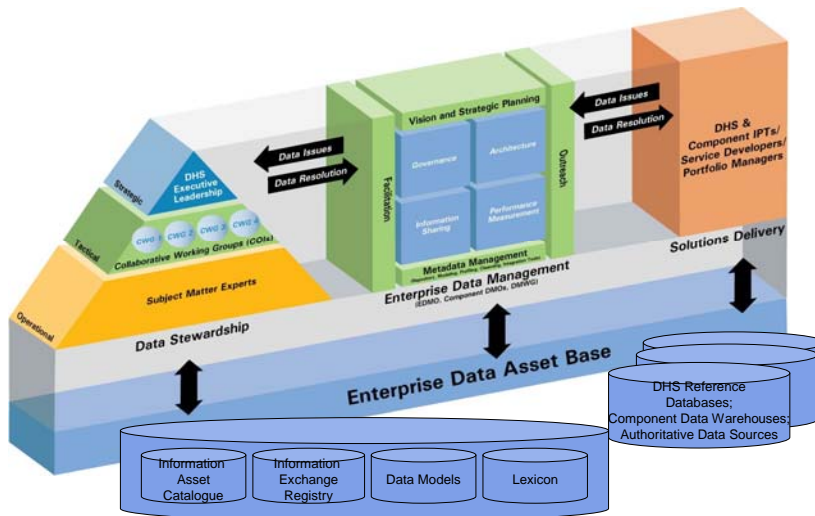



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Notional Operational & IT Engagement Model



DHS Enterprise Architecture Information Repository



Notional IT & Business Data Management Roles

- **Data Governance And Management Strategies**
 - Data Management Vision & Strategic Planning
 - Data Management Policies, Processes & Procedures
 - Data Stewardship Program Facilitation (Define Data Standards, Data-Related Business Rules, Authoritative Data Sources, Information Security Categorization and Privacy Rules)
 - Metadata Management Policies & Practices
 - Data Management Outreach Program
 - Data Management Performance Measurement Strategy Planning
 - Data Change Management Policies & Practices
- **Data Management Services & Solutions**
 - Enterprise Data Architecture And Integration
 - Baseline Current Architecture, Gap Analysis And Recommendations
 - Define Data Management Standards And Monitor Compliance
 - Define Enterprise Data Architecture And Monitor Compliance
 - Oversee Increment Data Models (Harmonization & Integration)
 - Program-Wide Data Administration & Technical Metadata Management
 - Manage Metadata (Discover, Define & Contribute Classifications, Taxonomy & Vocabulary)
 - Manage Conceptual, Logical & Physical Data Models
 - Define And Implement Data Exchange/Sharing
 - Execute Data Standardization Procedures (E.G., Naming Standards)
 - Implement Security And Privacy Protections, Information Security Categorization
 - Database Administration
 - Data Management Tools Support
- **Data Assurance; Performance Measurement; Outreach**
 - Data Quality Management (Audit, Recommend And Monitor)
 - Performance Scorecard (Measurement And Reporting)
 - Data Management Services and Solutions Outreach Program

Data Governance

Data governance is the exercise of authority and accountability for decision making and conflict resolution to ensure data assets are managed in the best interest of the enterprise

- **Data Governance** establishes policies, processes, and authority and accountability for decision making to ensure data is managed as valued asset, like money, equipment, facilities, etc.
- **Data Stewardship** provides a structured framework to ensure business people are accountable for managing the business aspects of data (definitions, business rules, quality, security and privacy parameters)

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Lessons Learned

- Management of information quality directly affects mission performance and thus must be treated as a mission critical function, not simply an administrative IT function
- Information quality is really all about the data and information being “fit for use” within each specific (relative) business context
- When data is shared across systems or organizations, the business context in which that data will be used is often altered, sometimes significantly
- Information sharing carries with it a serious responsibility for ensuring information quality, fitness for use of the data within the new business context
- Acknowledgement of this responsibility across organizations and development of mechanisms to ensure information quality are some of the most significant challenges that must be addressed in information sharing



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Lessons Learned

- Systems engineering efforts are required when the information needed to address business needs is contained in separate systems and must be shared
- However, without business context or responsible parties to explain that data and information as it travels through its full lifecycle to all stakeholders, assumptions and misunderstandings may occur
- The goal of systems engineering is to produce a technical capability; the goal of data and information management is to provide information that is “fit for use” in specific business contexts

Do not confuse information management with systems engineering

Do not assume systems engineering efforts will adequately address information management

Explicitly define the information management function in program planning and execution



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Next Steps

- Incorporate lessons learned into future initiatives
- Devote concerted effort into converting tacit understanding (or misunderstanding) of organizational, operational and IT roles and responsibilities into explicit engagement models
- Leverage developing DHS data management capabilities and Communities of Interest
- Continue outreach efforts

