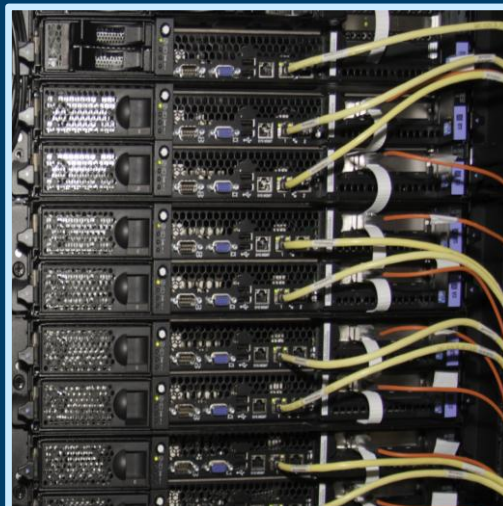


ORD Strategic Action Plan for Information Management/ Information Technology 2011



Office of
Research and Development
Office of Science
Information Management

Letter from the Director

Managing ORD's scientific information is essential to meeting EPA's mission of protecting human health and the environment. ORD's new Office of Science Information Management (OSIM) supports this objective through the delivery of appropriate information management (IM) and information technology (IT) processes and tools. As such, OSIM has the challenge of focusing on the most appropriate activities that align with ORD's priorities.

To better understand this connection, OSIM representatives visited all ORD locations and met with hundreds of ORD scientists, science managers, and administrative personnel. We also considered IM/IT trends and initiatives, including the vision expressed by Dr. Paul Anastas in his *Path Forward*.

The outcome of all of these efforts resulted in a set of defined, tangible activities – we call them “Actions” – that will support ORD's present and future science and research in an efficient and cost effective manner.

To learn more about ORD's Strategic Action Plan for Information Management/Information Technology 2011, as well as updates and progress, see our website at:

<http://intranet.epa.gov/ord/sap>

Thanks to everyone in ORD who participated in this effort. Very special thanks to Tom Tracy (ORD Chief Technology Officer) and OSIM's Lynne Petterson, who are the primary authors of this document.

Jack Puzak
Director, Office of Science Information Management
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Executive Summary



This plan establishes our Information Management/ Information Technology direction over the next two years.

Background

The work performed by ORD's researchers and scientists addresses complex environmental problems requiring robust, available, and adaptable IM/IT capabilities. In 2010, OSIM personnel visited all ORD locations to discuss IM/IT requirements and challenges. We discovered shared expectations as well as unique IM/IT challenges. These findings were the foundation for the development of unique, defined activities or "Actions" related to the "Goals" shown in Figure 1.

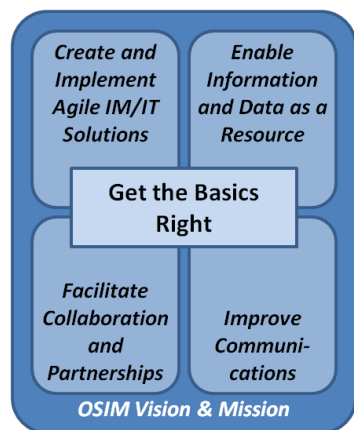


Figure 1 - The ORD SAP Goals represent important themes expressed by OSIM's customers.

What are the "Goals?"

- *Get the Basics Right*

As a provider of IM/IT services for ORD, there are certain necessary services that OSIM needs to deliver or coordinate. These include administering and managing IT resources as well as ensuring the stability of core IT services.

- *Create and Implement Agile IM/IT Solutions*

ORD's administrative and science community faces a number of IM/IT challenges. Flexible and responsive IM/IT solutions are needed including: scientific computing, geospatial capability, lab equipment connectivity, and applications .

- *Enable Information and Data as a Resource*

Although data are well managed for individual projects, opportunities exist for improved accessibility and availability in support of collaboration and transdisciplinary research.

- *Facilitate Collaboration and Partnerships*

ORD research projects are increasingly multi-disciplinary and collaborative. Researchers rely on geographically dispersed teams that include EPA colleagues, other federal and state entities, and universities. These research relationships require appropriate tools such as collaborative model development environments, video conferencing, and Web 2.0 technologies.

- *Improve Communications*

As OSIM grows from a fledgling to a mature organization, it needs to evolve its customer communications. The science community expressed a strong desire for more effective communications from OSIM.

How was this Plan Prepared?

This Plan used input from five main sources:

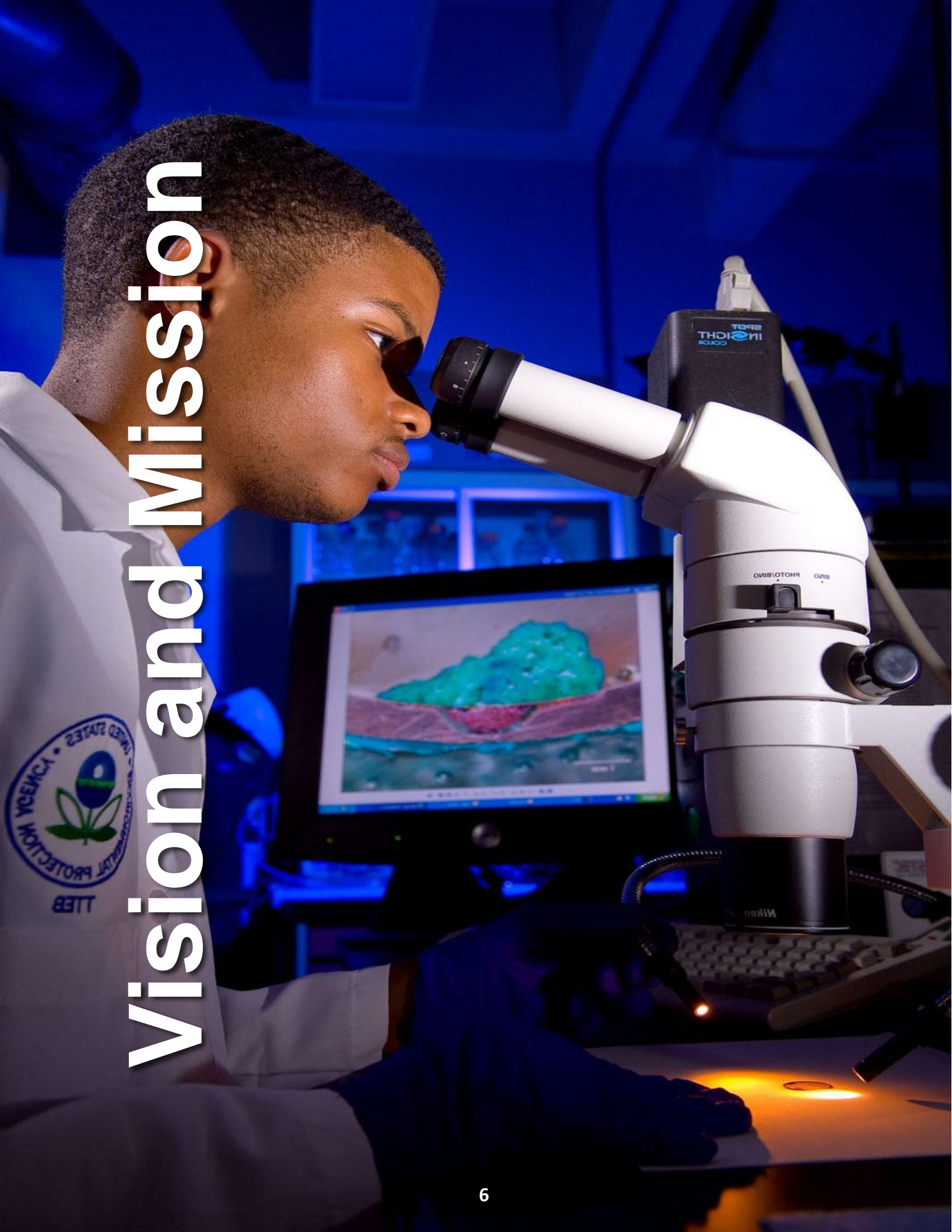
- Extensive data collection from discussions with ORD personnel
- Interviews and best practices from other federal and external organizations
- ORD's Path Forward principles and implementation activities
- OSIM's organizational mission and vision
- Internal and external drivers

From Plan to Action

This document is intended to improve ORD's IM/IT capabilities. Our next step will be to develop an Implementation Plan that defines IM/IT priorities, schedules, and performance metrics needed to build and advance ORD's administrative and research capabilities. Progress can be tracked at:

<http://intranet.epa.gov/ord/sap>

Vision and Mission



Our Vision and Mission guide our work.

Vision

Our vision is to be a premier provider of information management and technology services that support and enable world-class environmental research and science.

Mission

Our mission is to provide information management and technology services that advance ORD's mission, improve management efficiency, and deliver superior results to ORD's staff and external customers.



Actions



Actions

Five basic themes or “Goals” for IM and IT emerged from discussions with ORD staff. Within each Goal are numerous “Actions” describing specific services, products, and processes on which OSIM needs to focus.

Get the Basics Right

As a provider of IM/IT services for ORD, there are certain necessary services that OSIM needs to deliver or coordinate. These include administering and managing IT resources as well as ensuring the stability of core IT services.

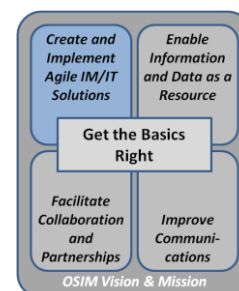


Name	Description
Streamline Hardware and Software Ordering	Although progress has been made, the process for ordering standard hardware and software still has inconsistencies and inefficiencies resulting in lengthy acquisition times. This action standardizes the process for ordering and removing hardware and software.
Improve Processes for Acquiring Non-Standard Hardware/Software and Administrator Rights	Although the process has improved, it is still somewhat inefficient for users to obtain non-standard hardware/software and PC administrator rights. This action streamlines the process.
Improve Integration of Service Requests and Brokering	Fragmentation of the EPA helpdesks results in mishandled, delayed, and/or misdirected requests for service. This action explores current shortcomings and develops recommendations (with OEI) for improvements and implementation.
Strengthen Core IT Infrastructure Operations	ORD's researchers and scientists need "utility-like" services for basic IT infrastructure components. This action addresses some key issues that require immediate improvement including storage capacity (such as MyDocs and L-drive), bandwidth, virus scans, and flexible patch and change management (such as upgrades for MS Office and operating systems).
Improve Contract and Vendor Management	After several years of using new IM/IT contract strategies (SES3, ITI, PPMSS, CTS), it is time to evaluate their effectiveness. This action will assess vendor performance, vendor location, vendor administration, and recommend improvements.
Maintain Core Conference Room Capabilities	Each ORD location has at least one conference room that serves as a collaborative hub for internal and external partners. These rooms require a core set of effective services including wireless LAN access, increased network bandwidth, and network port security. They also need an appropriately configured PC that is not adversely affected by virus scans and operating system patches. This action develops procedures for keeping conference room technologies operational and provides user documentation.

Actions

Create and Implement Agile IM/IT Solutions

ORD's administrative and science communities face a number of IM/IT challenges. Flexible and responsive IM/IT solutions are needed including: scientific computing, geospatial capability, lab equipment connectivity, and new applications.

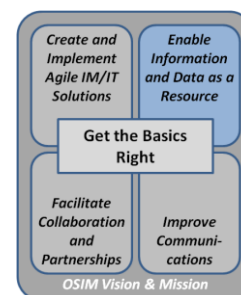


Name	Description
Design the Environment for Next Generation Scientific Computing	This action consists of evaluating and leveraging scientific computing options in ORD, EPA, and external providers. It considers the full spectrum of computing including virtual and physical desktops, centralized high-performance computing options, computational grids, data grids, and clusters.
Design and Implement Research Networks	Most laboratory equipment in ORD is not connected to the EPA network, which adversely impacts data management. This action designs and implements a research network to allow laboratory data to be securely shared, accessed, and stored.
Establish a Capability for New Technology Adoption	ORD's researchers work on the cutting edge of environmental science and often need new tools to effectively and efficiently perform their jobs. With this action, OSIM will establish a capability to evaluate IM/IT innovations and help integrate them in ORD's scientific projects.
Evolve ORD's Geospatial Capability	Geospatial applications, tools, and data are important for ORD's research and science efforts. This action will evolve ORD's geospatial capabilities, including the creation of a catalog of existing geospatial data, services, tools, and technologies. It also identifies and infuses new geospatial services and tools, including those offered elsewhere in EPA.
Enhance Administrative, Science, and Science Management Application Portfolios	This action develops a method to leverage and implement federal, Agency, and L/C/O system requirements in an efficient manner. It also addresses development and acquisition strategies.

Actions

Enable Information and Data as a Resource

Although data are well managed for individual projects, opportunities exist for improved accessibility and availability in support of collaboration and transdisciplinary research. Improvements are necessary in enterprise approaches to data quality, clearance, records management, data management, and library resources.

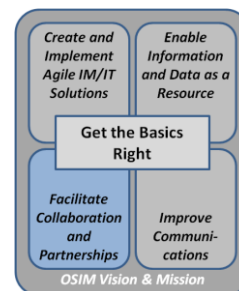


Name	Description
Create an Integrated Capability for ORD Electronic Clearance	This action creates an integrated approach for product clearance based on standard business processes across ORD. The system will provide easier access to information and improved tracking and reporting of products throughout their lifecycle.
Optimize Library Resources	ORD's scientists and researchers rely on library resources to augment and complement their research and they need access to the right resources in a timely manner. This action examines how to best leverage current library resources while also working with OEI and the EPA National Library Network to identify and implement new capabilities and resources.
Formalize an ORD-wide Quality System	ORD needs common QA processes and best practices to help ensure consistent application of QA/QC principles for all ORD research products and services. A more uniform ORD approach to QA/QC is also essential to efficiently execute transdisciplinary research. Several tools will be developed to implement the quality system starting with an ORD quality management plan.
Establish Scientific Data Management Policy, Procedures, and Guidance	Data are managed in a variety of ways throughout ORD. This action creates the policies, procedures, and guidance to promote data management consistency. Specific areas for attention include data retention, accessibility, usability, awareness, and metadata.
Implement Scientific Data Management Policies, Procedures, and Guidance	This action refines and implements ORD's scientific data management policies, procedures, and guidance. Activities include the development of a data survey, data architecture, file naming convention, access and version control, metadata generation, and appropriate disposition.
Offer an ORD Managed Vocabulary for Scientific Terms, Synonyms, and Definitions	ORD's researchers and scientists need a common vocabulary to facilitate transdisciplinary research. This action enables the ongoing capture of definitions for ORD's scientific terms and supports improved electronic search capabilities and reporting.
Integrate ORD Records Management Schedules	Today each ORD L/C/O has its own file plan which is associated with numerous records management schedules. Also, current tools do not link applicable information sources associated with the EPA file structure. This action integrates file plan and records management schedules across ORD as well as promotes consistency in the application of ORD's retention schedules.
Prioritize and Identify Data Value and Access	Data backups are performed in a variety of ways throughout ORD and can involve USB drives, PC hard drives, and servers. This action creates a consistent backup design that takes into consideration different data values, types, and accessibility requirements. The solution also incorporates programs such as continuity of operations, disaster recovery, and telework.

Actions

Facilitate Collaboration and Partnerships

ORD research projects are increasingly multi-disciplinary and collaborative. Researchers rely on geographically dispersed teams that include EPA colleagues, other federal and state entities, and universities. These research relationships require appropriate tools such as video conferencing, Web 2.0 technologies, and collaborative environments for model development.



Name	Description
Create an Expertise Locator	Although ORD's researchers generally know their colleagues well and vice versa, an increased emphasis on integrated research may require them to work with researchers in other disciplines. Additionally, researchers outside ORD or EPA may need to identify potential ORD partners for scientific collaboration. This action develops a searchable resource that catalogues the skills and expertise of ORD researchers for sharing information internally and externally.
Create a Repository of Capabilities at ORD facilities	The 2008 EPA Report "Commonsense Actions and Best Practices that Improve Laboratory Efficiency and Effectiveness" identified resource sharing as one potential area for efficiencies and cost savings. This action enables research teams to identify resources that could be used for their projects across laboratories and centers.
Communicate the Availability and Role of Agency Social Networking Tools	Social networking tools can improve the way in which EPA researchers collaborate with their partners. OSIM will assess the tools currently approved by EPA and perform a usability study with researchers to determine tool applicability.
Create a Desktop Video Conferencing Strategy	Although current Tandberg video conferencing potentially offers a high-quality solution for select conference rooms and offices, many ORD personnel want a more flexible capability. This action requires additional analysis and the implementation of a more pervasive video conferencing solution.
Provide Collaborative Document Authorship/Management Tools	Much of ORD's work is conducted across locations and in teams, thus tools are needed for simultaneous document editing and review. This action focuses on the deployment of tools to enable multiple authorship using sound procedures for version control.
Create and Sustain Role-based and Topic-based User Groups	As a means to improve OSIM's service delivery capabilities and provide a venue for information/technology transfer, this action establishes and maintains role-based and topic-based user groups.

Actions

Improve Communications

As OSIM grows from a fledgling to a mature organization, it needs to evolve its customer communications. One of the obvious findings of the L/C/O sites visits was a general lack of understanding about OSIM's role in ORD and the services it provides. The science community expressed a strong desire for more effective communications from OSIM, and identified a very wide range of topics including leadership in IM/IT tools, more transparency in OSIM's services, and better training on IM/IT resources.



Name	Description
Better Integrate OSIM into Research Planning	Most ORD research projects incorporate IM/IT components. Involving OSIM early in the process improves the impact of the IM/IT components and hence project results. This action defines an approach to integrate OSIM into all levels of the research planning process.
Increase the Value of OSIM Communications	Many ORD personnel are unfamiliar with OSIM's services and resources. This action entails creating and implementing a communications plan to increase the awareness of OSIM's capabilities through the development of multi-channel communication tools.
Improve OSIM Service Awareness and Requests	This action finds ways to make ORD more aware of the types of services that OSIM offers. It includes a catalog of OSIM services, procedures for requesting services, anticipated timeframes for OSIM to respond to service requests, and proposed measures of success.
Provide Expanded and Broader Training	Application and tool usage is enhanced when accompanied by effective training. This action establishes a training portfolio on topics and venues including computer-based training and instructor-led courses.
Improve Internet/Intranet Web Sites	ORD's Web presence requires improvements in both informational content and organization. This action redesigns ORD@work to facilitate improved communication within ORD. This action also addresses our input to the Agency's initiative for a topic-based Internet presence at www.epa.gov .

Appendices



Appendix A - Site Visit Summaries

Visit Overview

Location: Ada, OK

Organization Interviewed:

Visit Dates: August 8 - 12, 2010

NHEERL

Interview Findings

Agency

- Bifurcation of contractor support has affected some operations negatively, including maintenance of the local software catalog.
- Some personnel retain old PCs to use during administrative outages on CTS PCs (e.g., Monday virus scans).
- Internally developed models are made available on the Internet, but some personnel cannot install them because they do not have administrative rights.
- Recognized need for anonymous FTP capability.
- CTS PC hard drives are not large enough to store scientific data.
- Changes to CTS PCs have negatively impacted specialized applications installed on them (e.g., tables in ArcGIS and SPSS changed from Read/Write to Read Only)
- Lack of clarity around support for future Oracle products.
- Monday virus scans and "Big Fix incidents" negatively impact operations.
- "Science of the Future" PCs are used when CTS PCs are unavailable.
- Divergent views on the adoption of Office 2007.
- Perception of bureaucratic Internet hosting at the NCC resulted in going to a contractor.
- Computer sleep mode for mouse timeouts on CTS PCs has negatively impacted Webinars.

Communications & Outreach

- Lack of understanding regarding the configuration and operations of the IT infrastructure.
- Perception that no one is a single focal point for their IT infrastructure.
- Recognized need for OSIM's leadership to share examples of successful IM/IT practices used in ORD.

Service Delivery

- Researchers are concerned that graphics support may go off site.
- Inefficiencies experienced with remote delivery of vendor services.
- Perception exists that the migration to a more centralized service delivery model has been more about control instead of savings and operational efficiencies.
- Many problems with our technology stem from how it's configured, administered, and communicated.
- Recognized need to follow up with training. Need to validate that they actually learned.
- Lack of confidence in MyDocs resulted in researchers purchasing external hard drives.
- No formal capability to share institutional knowledge in support of transitional events.
- Recognized need of administrative applications training such as IFMS.

Data Management

- Hydrofracturing project could have big implications for storage capacity requirements
- Data is self managed in a variety of ways.
- Agency has no known plans to transfer data over once a PI leaves or retires, although records transition plans exist.
- Recognized need to develop models with other federal agencies and universities.
- Recognized need for OSIM to support data management planning and design.
- No citation analysis is performed on gray literature, which could be useful for promotion packages and APMs. USGS does a first rate job about promoting gray literature.

Appendix A - Site Visit Summaries

Visit Overview

Location: Ada, OK, continued

Visit Dates: August 8 - 12, 2010

Organization Interviewed:

NHEERL

Interview Findings

Models, Applications and Systems

- Hydrofracturing project is expected to include cross lab collaboration and involve other Federal agencies such as USGS, DoE, and US Corps of Engineers.
- Locally acquired software is catalogued in a database.
- Recognized need to collaborate with Cincinnati for their surface water modelling.
- Recognized need to have enterprise license access to certain specialized software packages such as SigmaPlot.
- Perception that lab PCs are not supported.
- Watershed Central effort could be used to better share ORD information and be used as an example for other similar efforts.
- Recognized need for a project management tool and potentially leveraging the Science Inventory.

Computing, Storage and Tools

- Some personnel have both CTS and SoF PCs.
- MyDocs does not meet researcher needs.
- Windows filename limitations negatively impact file naming capabilities.
- Quota limitations on network storage do not meet researcher needs.
- Recognized concern that many of the current applications will not run in the Windows 7 environment.
- Recognized efficiencies associated with adopting tablet PCs and smart phones to access applications while in the field.
- Need for UNIX desktop workstation for model visualizations (e.g., TOUGH model families).
- Network connectivity issues force researchers to download large data sets from home.
- Need to maintain old platforms to run old models (e.g., maintain old Windows ME laptops).

Appendix A - Site Visit Summaries

Visit Overview

Location: Athens, GA

Visit Dates: March 28 - 31, 2010

Organization Interviewed:

NERL

Interview Findings

Agency

- CTS service has improved although Lotus Notes is still buggy.
- Indicated that 24 to 48 hours is reasonable amount of time to wait for HPC processing.
- Direction is required on how to address routine LAN disconnections due to infrastructure related issues.
- The presentation computer goes into sleep mode during presentations.
- Migrated from Word Perfect to MS Word without a transition path for critical legacy documents.
- Operating system upgrades need to consider model/application compatibility.
- The Internet and Intranet sites need to be updated and to be consistent.
- Want the freedom and functionality of university Web sites.
- CTS solutions were developed as a "one size fits all" approach and did not consider researcher needs

Communications & Outreach

- Knowing where to get support is still a problem.
- OSIM should provide a service catalog.
- OSIM needs to promote itself with posters, bulletin boards, or even mouse pads.
- Email alone is not an effective communication path to reach us because we are dulled out by it.

Service Delivery

- Enabling ITR represents one of OSIM's biggest challenges.
- Opportunity to leverage contract vehicles for lab activities

Data Management

- External professional groups are setting data standards that promote model interoperability.
- Researchers must balance the tradeoff between addressing larger model compatibility issues at the expense of local needs.
- Data often has relevance for less than 3 years and is seldom accessed when it's 10 years old.
- Researchers prefer to self manage data on local devices.

Models, Applications and Systems

- "The future lies not in single model development but with systems of models."
- Standards such as FRAMES and D4EM are necessary for model integration.
- Models are envisioned to be kept forever.
- Applications are sent out on CD to be hosted elsewhere.
- Recognizes the need for a forum to share work and capabilities outside of the agency.

Computing, Storage and Tools

- Vendors need direct connections to support lab equipment.
- Need to know the cost for applications such as ArcInfo.
- Most people perform their backups to local drives and some synchronize with My Docs.
- Reliance on local universities to access needed journals.
- Spend 80% of our time collecting data, and 20% analyzing it. It should be reversed

Appendix A - Site Visit Summaries

Visit Overview

Location: Cincinnati, OH

Visit Dates: June 6 - 10, 2010

Organizations Interviewed:

NCEA, NERL, MHSRC, NRMRL

Interview Findings

Agency

- Recognized need for increased bandwidth.
- Recognized need to remotely access CTS, and non-CTS, PCs.
- Lack of awareness regarding freeware/shareware policy across the enterprise.
- Lack of awareness regarding new technology projects.
- Forced CTS PC updates negatively impacts user productivity for example national priorities.
- Recognized need for a mechanism to process emergency situation service requests with the ability to generate a ticket after resolution.
- Inconsistent knowledge level among CTS support technicians.
- Perceived cumbersome path to get Web facing data/applications.
- Creative work-arounds exist to solve technology issues (personal web sites, auditing classes to get journal access).
- Perceived poor performance of the Science FTP server.
- Positive experience with ESRI GIS support.
- Need the ability to host large files password protected files to the public.

Communications & Outreach

- Lack of clarity regarding the roles and responsibilities for the process and data entry.
- Lack of awareness of tools such as the SSZ.

Service Delivery

- Lack of clarity regarding the roles and responsibilities for the process and data entry.
- Lack of awareness of tools such as the SSZ.
- Need for Oracle database expertise (LIMS project).
- Clarification on IT approval/procurement process.
- Need for "power user" GIS support.
- Recognized the ability/necessity for OSIM to breakdown ORD stovepipes.
- OSIM needs to be politically savvy to recognize the issues across ORD.
- One size for IM/IT services does not fit all users' needs.
- CSRs need to be involved in the early project planning phases rather than at the end.
- Need for data migration services and insights to vision OSIM's goal in moving L/C/O's from a piecemeal to an enterprise approach.
- Center of excellence capabilities are needed for common critical IM/IT functions such as Web support, technical writing, and database support, to promote project continuity.
- Standard practices for standard hardware procurement and configurations are needed.
- Streamlined approaches for 508 compliance and IT consumables procurement are needed.
- OSIM needs to share targeted best practices across the ORD.

Appendix A - Site Visit Summaries

Visit Overview

Location: Cincinnati, OH, continued

Visit Dates: June 6 - 10, 2010

Organizations Interviewed:

NCEA, NERL, NHSRC, NRMRL

Interview Findings

Data Management

- Need to access databases external to EPA.
- Knowledge is captured and managed in a variety of ways at the project level.
- Need to have a managed vocabulary.
- Retrieval of data requires knowing the owner, type of research, and data set name.
- Need to know software versions used by all collaborators on a given to a project.
- Recognized the fact that metadata enables the reuse, re-analysis, scaling, linkage, and overlay of data in multiple ways both current and future.
- Potential retirement of project and research data coincides with retiring employees.
- Recognized the condition of technology obsolescence and/or proprietary platforms that negatively impacts access to old data.
- Recognized that ORD needs a file plan.
- OSIM should partner with the L/C/O's for data management strategy and execution.
- Foresee "citizen science" involvement in data collection.

Models, Applications and Systems

- Need to print, to edit, and to resend pdf files to support LOB information sharing processes.
- Need for increased model integration.
- Duplicate data entry is currently required to provide full publication recognition.
- Need for version control software and to revisit studies.
- Recognized the need for enterprise licenses for key software packages, such as Adobe Professional and SAS.
- Recognized quality assurance benefits for the Electronic Clearance System.
- Identified opportunity to reduce the number of ORD quality assurance systems.
- Recognized the benefit to include audio capability with ESC Web conferencing.
- Recognized need to have Skype-like video conferencing capability.
- Expressed desire to "check in" and "check out" software licenses that are not required permanently.
- Recognized the need to have system that has "expanded" Biosketch capabilities such as being able to search on a people and publications.
- Recognized the need for an ORD enterprise software catalog.
- Recognized need to integrate the NHSRC Security, Quality Assurance, and Clearance processes.
- Need to have publication ready output capability that is linked to PC based statistical data.
- Recognized the need for better modelling and systems integration.

Computing, Storage and Tools

- Recognized that the demand for data storage is going to ramp up significantly for the bioinformatics core.
- Recognized dependence on having a managed dictionary and scientific data management policies to recognize the benefits of an Electronic Lab Notebook.
- Perceived cumbersome capability to map drives when remotely connected via F5.
- Relied on contractors to host data for expediency and storage availability purposes.
- Need to network printers within a given laboratory work space.

Appendix A - Site Visit Summaries

Visit Overview

Location: Corvallis, OR

Visit Dates: July 18 - 21, 2010

Organization Interviewed:

NHEERL

Interview Findings

Agency

- CTS updates have crashed PCs resulting in permanent data loss.
- Network access to centralized software library for restoring PC applications required weeks to rebuild.
- Inadequate WAN bandwidth has a negative impact. People told not to use the WAN bandwidth, which may cause usage issues moving forward. Personnel go home to access the internet and download data needed for projects.
- Problems engaging HPC have led to users running jobs locally despite the slower performance, and failed attempts to use the Visualization lab inhibit future usage.
- Looking forward to having CTS PCs upgraded and to get Windows 7.
- Perceived slow responses time from the Science FTP Server.
- Virus scanning at noon on Monday interrupts work for hours.
- Requests for shareware/freeware take too long to adjudicate.
- CTS laptop hard drives are too small to accommodate scientific data needs.

Communications & Outreach

- No guidance exists on the requirements for providing public access to data.

Service Delivery

- Training is needed for new applications (e.g., moving from SAS to R).
- MyDocs did not meet the needs of the researchers and scientists.
- Repeatedly dropped LAN connections adversely impact back up processing.
- Different approaches to managing the infrastructure (e.g., port security) negatively impacts operations.

Data Management

- Data are managed individually in a variety of ways.
- Locally initiated GIS data catalog that could be leveraged across ORD.
- Recognized need to archive data libraries from various sources - internal and external to the EPA.
- Researchers and scientists are concerned that the EPA does not have the means to back up their scientific data.
- No plans exist to catalog data sets when PI's retire.
- Questions exist regarding how to manage "national treasure" data that cannot be reproduced.
- Some statistical models require years to create, and can require tweaking after 6 months of effort.
- Environment research can take at least 5 years, and up to 10 years to complete.
- Lack of awareness regarding data retention requirements.

Appendix A - Site Visit Summaries

Visit Overview

Location: Corvallis, OR, continued

Visit Dates: July 18 - 21, 2010

Organization Interviewed:

NHEERL

Interview Findings

Models, Applications and Systems

- Collaborates with academia (e.g. Kansas State, GA Tech) for model development and hosting.
- Recognized need to develop integrated models to address larger eco-region issues.
- Recognized need for a permanent archive that contains historical project data sets.

Computing, Storage and Tools

- Expressed desire for personal Web pages to share areas of research, accomplishments, and other professional information.
- Reliance on academic partners to post EPA generated files to share with external partners.
- Experiences problems with UNIX workstation administration and has stopped using it.
- Data storage requirements are expected to increase rapidly in the near future.
- Infrastructure obsolescence negatively impacts access to old data sets.
- Recognized need for a wireless LAN.
- Recognized need for document management for collaboration.
- Recognized need for Skype-like video conferencing.

Appendix A - Site Visit Summaries

Visit Overview

Location: Duluth, MN

Organization Interviewed:

Visit Dates: May 23 – 26, 2010

NHEERL

Interview Findings

Agency

- Critical needs for faster agency approval time for new technology. i.e., Microsoft Windows 64 bit.
- CTS upgrades, without notification, negatively impact their science work.
- Bifurcation of service desk support complicates and slows issue resolution.
- Recognized need to get timely access to freeware/shareware applications.
- Perceived high cost for hosting public applications.
- Lack of visibility regarding OEI projects schedules.
- A number of necessary infrastructure improvements such as VoIP are slowed by OEI initiatives such as the LAN equipment upgrade.
- The current security approach for Web conferencing impedes ad hoc conferences with external partners.
- Confusion exists regarding WCF expense reports.
- Occasionally, the CTS service desk cannot provide updates on their service tickets.

Communications & Outreach

- Opportunity exists to increase awareness of OSIM's services and value to ORD.

Service Delivery

- Recognized need for linux-based support.
- Contractor support for programming and statistical support works well.
- Reporting on invoices seems delayed.
- Lack of visibility into the OSIM process for NCC hosting.
- Opportunities exist to improve cross-vendor and intra-vendor coordination in support of timely performance information.

Data Management

- Data is self managed in a variety of ways.

Models, Applications and Systems

- Recognized need to streamline the ESC user registration process for non-EPA employees.
- Large bioinformatics data sharing requirements are not being met. Opportunities to improve application support exist.

Computing, Storage and Tools

- Network bandwidth, both LAN and WAN, does not meet current, or planned, demand.
- Interest in interconnectivity for connecting lab computer resources including file transfer and storage.
- Wireless LAN solution for conference rooms is being pursued internally.
- LAN drives are very slow.
- Opportunities exist to leverage dashboards for timely performance data of contracts and projects.
- Lack of awareness regarding OEI and OSIM purchased enterprise licensed software.
- Some groups only need temporary access to licensed software such as SAS.
- Recognized need for anonymous FTP capability

Appendix A - Site Visit Summaries

Visit Overview

Location: Edison, NJ

Visit Date: May 20, 2010

Organization Interviewed:

NRMRL

Interview Findings

Agency

- Recognized need for a mechanism to get immediate service request response under special conditions with the ability to generate a ticket at a later time.
- Recognized need to host files in a FTP facility that can contain compiled files or individual files.
- It takes entirely too long to acquire freeware applications.
- Service recognition that log ins may take an hour is excessive and displays a disregard for researchers' time.

Communications & Outreach

- Lack of awareness of OSIM services.
- Our communications need to be free of IM/IT jargon.

Service Delivery

- They want OSIM to figure out which tools to use and to evaluate technology.
- OSIM needs to create a vision for standard solutions.
- Statistical support from last year went unfilled, which must be known to plan next year's budget.

Data Management

- They would like provide O Drive access outside of ORD but within EPA.

Models, Applications and Systems

- Recognized need for an enterprise wide approach to standard applications.
- Remote lab equipment needs to be connected to the network.
- Standard desktop applications do not meet some scientific needs.
- They prefer point and click applications and prefer not to program.
- Inability to have access to periodicals from non-ORD sites.
- MyDocs locks up when the network MS Word documents are out of synchronization between the PC and the LAN.

Computing, Storage and Tools

- Need a solution to network remote field instrumentation to the lab.
- A tool to convert pdf's to usable data would be helpful.

Appendix A - Site Visit Summaries

Visit Overview

Location: Grosse Ile, MI

Organization Interviewed:

Visit Dates: May 26 – 27, 2010

NHEERL

Interview Findings

Agency

- Bifurcation of service desk support complicates and slows issue resolution.
- Recognized need to get timely access to freeware/shareware applications.
- The approval process to obtain freeware/shareware applications appears to be cumbersome.
- Perceived high cost for hosting public applications.
- Perception that the implementation of CTS has slowed service performance delivery.
- PC reboots during the night can cause the loss of an entire night's data collection.
- Forced PC reboots during model processing results in productivity losses.
- Performing virus scans on Monday's at noon negatively impacts researcher productivity.

Communications & Outreach

- Scientific publications that are free on the SSZ are not highlighted.
- Lack of awareness regarding ebusiness functionality.

Service Delivery

- Contracting vehicle changes from one to three categories increases administrative work.
- Recognized need for Linux-based support.
- On line tutorials are preferred to Webinars because tutorials can be taken at any time.
- Expressed need for local on site support services, such as graphics or Web support.

Data Management

- Opportunities exist to improve the cataloging and access to ORD data as compared to other agencies such as USGS, USDA, and NOAA.
- People keep their own data and manage it in a variety of ways.
- Retrieval of data requires knowing the owner, type of research, and data set name.

Models, Applications and Systems

- The current models require large data set input (multiple terabytes) from various federal groups such as the US Navy and NOAA and produce even larger amounts of data.
- Models need to be adapted to support parallel processing with the support of the RTP EMVL.
- Limited implementation of Web Forms.
- Opportunity for improved application instructions and training.

Computing, Storage and Tools

- Computing and storage requirements for current models are inadequate and future models are expected to have greater compute and storage requirements.
- Increased utilization of remote sensor data grabbers such as buoys results in the collection of larger amounts of data.
- New advances in computing, such as 64 bit processing, may be incompatible with existing models.
- Existing storage arrays are old and are not supported by the vendor.
- Recognized need for updated Linux workstations.
- Suggested leveraging enterprise wide software enterprise licenses.
- Recognized concern of increased reliance on the network for new applications while it does not meet today's needs.

Appendix A - Site Visit Summaries

Visit Overview

Location: Gulf Breeze, FL

Visit Dates: June 21 - 23, 2010

Organization Interviewed:

NHEERL

Interview Findings

Agency

- Perceived high cost of centralized storage.
- Lack of clarity regarding storage costs (one time vs. on going).
- WAN bandwidth demand exceeds its supply, which forces end users to download data from their homes.
- CTS laptop applications do not appear to work when working remotely.
- Intranet standardization project broke links on the GED Intranet site, and GED was charged to fix the broken links.
- GIS processing that takes 1/2 day in the office takes 20 minutes at home.
- CTS operating system configuration does not permit full RAM utilization.
- Lack of awareness regarding mapping network drives when working remotely.
- LAN drive mappings are lost on a regular basis.
- CTS PC hibernation impacts data downloads and model runs.
- End users were unable to run a local application on CTS laptops in the field during the federal response to the gulf oil spill.
- Unable to implement indexing of Lotus Notes email.
- Conference room PCs are old and require a significant boot time to process patches and to run security scans.
- Slow cluster performance and competing users at the EMVL resulted in the creation of a local cluster.

Communications & Outreach

- Enhanced communication needed for system events that impact the end user with the ability for the end user to provide input regarding event timing.
- Opportunities exist to communicate functionality and user instructions for IM/IT resources.
- Lack of clarity regarding remote access tools, such as the terminal services and the AAA token, and their capabilities.
- Lack of clarity regarding contractor support for video conferencing.
- Lack of clarity of OSIM's core strengths.
- Opportunity exists to improve contract status and reports.

Service Delivery

- Recognized need for improved journal access.
- Need to have more transparency in IM/IT investment.
- Recognized need for a direct EPA wide library search capability.
- Recognized need for LabNet to enable the receipt of real time data from remote field instrumentation.
- Recognized need for an ORD-wide high end consulting support organization.
- Recognized need for a single number to call for all service requests.
- Capitulation on making service requests as a result of perceived timeliness and quality issues.
- The time between service requests and provisioning takes more time.
- No feedback mechanism exists to validate that software development work has been completed to customer satisfaction.
- Proactive monitoring absent from IM/IT OSIM sponsored contracts.

Appendix A - Site Visit Summaries

Visit Overview

Location: Gulf Breeze, FL

Visit Dates: June 21 - 23, 2010

Organization Interviewed:

NHEERL

Interview Findings

Data Management

- Recognized the potential overhead costs associated with standardized data management policies and procedures.
- Recognized need to publically host data such as the remote telemetry sensor data.
- Recognized need that spatially referenced data require an agreed upon consistency.

Models, Applications and Systems

- Need to collaborate with the Stennis US Naval Research Lab for their physical model of the Gulf of Mexico.
- Need to collaborate with local universities for the ESRP Dashboard project.
- Need to collaborate with NASA for satellite imagery for the Coral Ecosystems team.
- Spreadsheets are used to capture products and APMs instead of Science Inventory.
- Expressed the need to continue to leverage LN databases for administrative functions such as facilities, awards, training, and 52's.
- Administrative applications require inordinate amount of manual processing.
- Potential duplication of effort between NHEERL financial reports and OARS financial reports.
- Recognized need to simply on line resources with a single sign-on capability.
- Recognized to need to have software licensing sharing across the branches.
- Expressed need for Skype like video conferencing capability.
- Expressed the need for a Web based decision support tool for the Dashboard project.
- Recognized need to use a blog to share information and solutions.
- Recognized need to collaborate on document authorship with external EPA partners with a tool such as Google Docs.
- Recognized need for a system to enable a professional presence such as areas of focus, products produced, and current projects.
- Lack software development and IT tools knowledge in support for research projects.
- Recognized multiple software pilots benefits but with need for eventual consensus.

Computing, Storage and Tools

- Excel queries to databases external to the EPA are blocked at the firewall.
- Perception that they are not getting the value out of the money spent on Lotus Notes support.
- Confidence wanes as a result of perceived excessive server downtime and lack of effective communication.
- Researchers and scientists don't necessarily know how to anticipate their data growth volumes and need guidance

Appendix A - Site Visit Summaries

Visit Overview

Location: Las Vegas, NV

Visit Dates: January 11 – 15, 2010

Organization Interviewed:

NERL

Interview Findings

Agency

- Critical needs for faster agency approval time for new technology. i.e., Microsoft Windows 64 bit.

Communications & Outreach

- Communication/service gaps exist for the initiation, tracking, escalation, and maintenance of administrative applications.
- Recognized the need for an advanced computing/tools user group.
- Requested an ESD follow up site visit 6 months out from the initial visit.
- Recognized OSIM/ESD partnering and follow up.

Service Delivery

- Desire for improved service request process.
- Some elements of IM/IT planning and implementation are addressed through the QA process.
- Opportunity exists for deploying OSIM Subject Matter Experts i.e., computer scientists, data architects.
- There is a lack of visibility regarding progress on how service desk calls are being pursued and resolved.
- As OSIM takes on more leadership and responsibility there is a desire for more transparency and performance metrics.
- Desire for better understanding of OSIM contract vehicles and potential for leveraging existing OSIM contracting vehicles.

Data Management

- Data is self managed in a variety of ways.
- Potential accessibility issue identified regarding old hardware, OS, and application.

Models, Applications and Systems

- Opportunities to improve application support exist.

Computing, Storage and Tools

- Need for more power computing platforms and more expansive storage resources.
- Desire for improved collaboration including transfer of large data files.
- Request for a collaborative development environment with external access.
- Interest in interconnectivity for connecting lab computer resources including file transfer and storage.
- Reliance on external and usb drives

Appendix A - Site Visit Summaries

Location: RTP, NC

Visit Dates: March 22 – 24, 2010
May 2 – 5, 2010
August 2 – 5, 2010

Visit Overview

Organizations Interviewed:

NCEA, NERL, NHEERL, NHSRC, NRMRL, NPDs

Data Management

- Desire to link the Intramural Research Protocol (IRP) with QAIMS to capture data only once.
- Data management is PI centric with variable approaches.
- Openness to share data following publication of the associated product.
- Opportunity exists for additional engagement of Records Managers and Librarians.
- Need exists for high content data reuse. Data captured today may have significance in the future.
- Trying to use data assemblage tools for data standardization could negatively impact productivity.
- Standardizing lab equipment output to be searchable would greatly increase scientist efficiency.
- Running chemistry or atmospheric models produce large amounts of data.
- A flexible infrastructure is needed to support local data management practices.

Models, Applications and Systems

- Ways are needed to maximize resources, such as application development, to stretch dollars and to improve efficiency.
- Web-based software could potentially provide improved remote accessibility and license sharing.
- Improve awareness of CREM models.
- Need the ability to collaborate on model development from an internal and external agency perspective.
- Unanswered questions exist regarding the use of applications that relied on OMIS HR data.
- The Science Inventory has accuracy issues.
- Need for a planned publication tracking system to include the type of product, the researchers involved, and the authors.
- Opportunity exists for OSIM to pursue additional enterprise license agreements.
- Data needs to be shared with a few dozen international groups with data sets up to 60 GB in size.
- The Environmental Science Connector has had a positive impact for multi-lab and inter-agency projects.
- Expressed the need to collaborate with NASA, NOAA, DoE, and the NCAR at the Global Climate Change Center.

Computing, Storage and Tools

- Skepticism exists regarding the use of an Electronic Lab Notebook (ELN) that is Good Laboratory Practices (GLP) compliant because of the intricacies regarding data management procedures.
- Desire to leverage idle PC time and put it to use for large computational needs (grid computing).
- Publication access is an issue. Perceptions exist that TIMS is not searchable.
- Need greater access to online libraries (e.g., NIH).
- Desire for a bulletin board that is based upon topic and lists key events over the next few months.
- ESC should have the ability to share visualizations.
- Desire to continue to use the large number of home grown Lotus Notes applications that exist across the division.
- Little confidence exists in the recovery of backed up data.
- Request newer computers for conference rooms.
- Instruments in the lab need to connect to office PCs to manipulate data.
- My Docs is limited to 10 GB and larger capacity may be needed, but they do not know how to request it.
- Multiple applications are used to perform similar functions.
- Interest exists in learning more about the virtual desktop environment.

Appendix A - Site Visit Summaries

Visit Overview

Location: Narragansett, RI

Visit Dates: May 9 - 13, 2010

Organization Interviewed:

NERL

Interview Findings

Agency

- Lack of wide area network redundancy.
- Confusion exists for CTS vs. non CTS support.
- Recognized need to get timely access to freeware/shareware applications.
- Perceived high cost for hosting public applications.
- CTS lack of responsiveness for people with disabilities.

Communications & Outreach

- Establish a broadly focuses local user group.
- Need to improve communication on EMVL and HPC.
- Recognized need for GIS user group.
- Lack of awareness OSIM/OEI resources such as root access to PCs.
- Recognized need for OSIM service catalog.

Service Delivery

- OSIM needs to provide new ways to introduce technologies and other innovations for science projects.
- Recognized need to broker relationships for technology transfer.
- Perception of bottlenecks and lack of transparency regarding work request process for Web and graphics support.
- Need for expanded Linux-based support.
- Recognized opportunities for partnering with data and information management architecture (Ecosystems Research Project).
- Opportunity exists for deploying OSIM Subject Matter Experts i.e., computer scientists, data architects.
- Perceived high cost for RSGIS contracts.

Data Management

- Data is self managed in a variety of ways.

Models, Applications and Systems

- Administrative applications need support to address local Lotus Notes applications.
- Need for collaborative development inside and outside of the agency.
- Need for inter-agency system integration.

Computing, Storage and Tools

- Pathway needed for SOF refreshment.
- Recognition that new tools and technologies are critical to enable ITR.
- No ability to test wireless applications.
- Recognition that PCs should be more like scientific instruments.
- Multi sourced printers add complexity to maintenance and usage.
- Need a roadmap for provisioning server/storage infrastructure.
- Interest in interconnectivity for connecting lab computer resources including file transfer and storage.

Appendix A - Site Visit Summaries

Visit Overview

Location: Newport, OR

Visit Date: July 21, 2010

Organizations Interviewed:

NHEERL

Interview Findings

Agency

- Hard drive size on the laptops are too small for scientific tools and data sets.
- Recognized need for increased WAN bandwidth.
- Multiple support contracts inhibit communication between contractors and slow issue resolution.

Communications & Outreach

- Perception exists that application hosting is too bureaucratic.

Service Delivery

- Recognized need for training for specialized software, such as R (local post doc has offered to teach classes).
- Dropped LAN connections adversely impact daily operations.
- Recognized need for training on new applications, such as Office 2010.

Data Management

- Recognized expectation that data set volumes are going to grow significantly.
- Perceived issues regarding the ability to back up the anticipated large data sets.
- Multiple copies of the same journal pdf files are being maintained researchers and scientists.

Models, Applications and Systems

- Perceived high costs of specialized software, such as SAS.
- Some modelling is performed today but more is expected in the future.
- Science projects pushes collaborative requirements outside of the EPA, but tools don't exist to support it.

Computing, Storage and Tools

- Recognized need to use automated instruments to collect field data (moored in estuaries for extended periods of time).
- Ruggedized laptops are needed to collect field data.
- Reliance on Access as the database management system platform.
- Limitations on file and folder name length causes access problems.
- Granularity of GIS scans is inhibited by the amount of available storage.
- Science of the Future PCs were very effective initially, but they are now getting old.

Appendix A - Site Visit Summaries

Location: RTP, NC

Visit Dates: March 22 – 24, 2010
May 2 – 5, 2010
August 2 – 5, 2010

Visit Overview

Organizations Interviewed:

NCEA, NERL, NHEERL, NHSRC, NRMRL, NPDs

Interview Findings

Agency

- Brokering OEI services is problematic. Help desk calls get "ping-ponged."
- There is bandwidth inconsistency between RTP and Chapel Hill, which causes problems for branches with people at both locations.
- Downloads appear to be slow from external sites.
- Network connectivity is needed for remote devices such as data loggers.
- Lotus Notes and video conferences are problematic.
- AAA tokens for federal employees have taken 10 to 12 weeks to provision with little insight regarding the long delivery times.
- Costs for NSS services appear to be expensive.

Communications & Outreach

- Lack of awareness regarding who to call for support.
- More communication is needed regarding centrally provided tools and applications.
- User group dynamics and roles are not well understood.
- Need for marketing material to promote OSIM services such as micro-brochures, short presentations, or videos.
- Lack of clarity regarding services and resource support from OSIM vs. OEI vs. L/C/O.
- Desire for transparency on the HPC selection and management process.
- OSIM should represent the science needs when working with OEI.
- OSIM needs to reduce the use of IM/IT jargon.

Service Delivery

- Improve leverage of the OSIM partnership to provide new tools and technologies.
- Engage Post Docs to assist in the identification and adoption of new technologies.
- OSIM should conduct a technology fair with booths and demos to demonstrate new capabilities with hands on opportunities with vendors to try new technologies.
- OSIM should provide technology consulting support to let us know what's possible.
- OSIM needs to demonstrate information/ownership/governance leadership, which will foster an improved research environment.
- Projects are being pursued with large IM/IT impacts without OSIM involvement in planning.
- Uneven support/vendor knowledge on the helpdesk exists.
- Need for better training and awareness of applications.
- OSIM can provide value by getting involved in the discussions that researchers conduct when planning their multi-lab, multi-disciplinary projects that have an IM/IT requirement.
- OSIM should get involved in seeding prototype projects similar to WikiLIMS.
- System impacts need to be considered with upgrading applications.
- OSIM needs to take the leadership role in defining the requirements and get collaboration development started.

Appendix A - Site Visit Summaries

Location: Washington, D.C.

Visit Overview

Visit Dates: January 25 - 27, 2010

June 28 – July 1, 2010

August 30 – September 2, 2010

Organizations Interviewed:

DAA, CREM, NCEA, NCER, NPDs, ORMA, OSA, OSP

Agency

- Recognized problems with helpdesk integration points.
- Printer management needs to be more proactive to correct malfunctions.
- Service desks calls are not made as a result of an apparent lack of results
- End users approach technology savvy end users to resolve issues to avoid calling the service desk.
- Recognized need to test telework infrastructure.
- Recognized need for detailed reporting for WCF telecommunications services.
- Perceived long delays between requesting CTS service and receiving it, such as PC provisioning.
- Recognized need for Welcome Packets similar to previously distributed CTS packages.
- Expressed interest in getting more options for desktop applications.
- Requested standardized instructions for basic infrastructure resources such as flexiplace capabilities and security tokens.
- Lack of clarity around support for future Oracle products.
- Inconsistent knowledge level among CTS support technicians.
- Perception that CTS communications are too lengthy and are too difficult to read.

Communications & Outreach

- OSIM needs to communicate in a language that our partners and customers understand
- Recognized need for OSIM to get involved in the Performance Improvement Council.
- Requested improved telework support in the areas of training and resource provisioning
- Lack of clarity regarding available OSIM services and desire for a "cheat sheet" that identifies responsible parties with contact information.
- OSIM blasts are recognized as spam.
- Lack of clarity regarding roles of OSIM, OEI, and OARM.
- Recognized need for personal relationships with OSIM.
- Proposed OSIM developed policies need to be communicated with the management council prior to adoption.
- Preference to have communication regarding new software updates well in advance of the implementation.
- Requested standard operating procedures for internal office moves.
- Conduct OSIM capability seminars followed up by hands on sessions as appropriate.
- Conduct site specific demonstration and training days as preparation for an ORD@home test day.
- OSIM should provide various application training options such as email notifications, one pagers, and detailed instructions based upon user's individual needs.
- Advertise the DC User's group.
- Communication needs to be woven into everything that OSIM does.
- OSIM needs to communicate via multiple channels - including face to face meetings whether physical or virtual.
- Better coordination is needed before taking systems off line.

Appendix A - Site Visit Summaries

Location: Washington, D.C., continued.

Visit Overview

Visit Dates: January 25 - 27, 2010

June 28 – July 1, 2010

August 30 – September 2, 2010

Organizations Interviewed:

DAA, CREM, NCEA, NCER, NPDs, ORMA, OSA, OSP

Service Delivery

- Strengthen the OSIM-OPA partnership for administrative system connection points.
- Provide a higher priority level of service for senior executives.
- Prepare for emergencies before they occur.
- Decisions need to be made upon science need and not the squeaky wheel.
- OSIM needs to justify the science implications on its initiatives especially with limited budgets.
- ORMA/OSIM/OARS cooperation is working well
- Recognition of OSIM's leadership role in Integrated Transdisciplinary Research.
- Provide transparency for ORD regulatory and policy data calls.
- Better "after hours" application support is needed.
- CSR spends too much time on CTS issue resolution and does not have sufficient time to support the science.
- Lack of clarity regarding OSIM's graphics support role.
- Lack of clarity on OSIM's role in supporting the Web.

Data Management

- Data storage standards vary between health and ecology and OSIM needs to be cognizant of those differences.
- Recognized OSIM's leadership role regarding data sharing.
- Need for data mining tools to scan literature and to organize information.
- Data retrieval requires knowing the owner, type of research, and data set name.
- Recognized need to consistent look and feel for databases.
- Preference for GUIs to mine information from databases
- Acknowledged that multiple copies of the same data exist and that a better alternative features a single copy with pointers to it.

Appendix A - Site Visit Summaries

Location: Washington, D.C., continued

Visit Overview

Visit Dates: January 25 - 27, 2010

June 28 – July 1, 2010

August 30 – September 2, 2010

Organizations Interviewed:

DAA, CREM, NCEA, NCER, NPDs, ORMA, OSA, OSP

Interview Findings

Models, Applications, and Systems

- Recognized need for better integration in both administrative and scientific applications.
- Need the ability to acquire software, track its usage, and provide training for it on OSIM@work.
- Custom developed applications such as grants and financial management should be integrated with calendar and reporting functionality.
- Need the ability to have same day registration for external partners on the Environmental Science Connector.
- Searching on Science Inventory needs improvement.
- Recognized need for a system that catalogs active science projects.
- Recognized need to leverage social networking tools.
- Recognized need for tracking the usage of EPA's publications.
- Document manipulation on the ESC needs to be streamlined.
- Recognized need for a system needed to track credit for ITR (after a business decision is made regarding the credit).
- Recognized need for a system to track FOIA actions.
- Recognized need for a HR system with data that is accurate, verifiable, able to be analyzed.
- Recognized need for a risk management system integrated across ORD
- Recognized need for an improved BioSketch application.

Computing, Storage and Tools

- Need to figure out implications for Ico's decisions on locally acquired resources.
- Need to have a spare parts capability
- Recognized need to allocate resources based upon usage
- Video cameras on the desk top
- VTC with flexiplace employees
- Tandbergs are difficult to use
- Lack of clarity regarding printer purchasing and repair
- Desktop project management tool that is ubiquitous and easy to use.
- Recognized need for Skype-like video conferencing.

Appendix B – Acronyms

These acronyms were used in this document.

Acronym	Description
CBT	Computer Based Training
COTS	Commercial, Off the Shelf, Software
CTS	Computer Technology Solutions
GAO	Government Accounting Office
IM	Information Management
IT	Information Technology
ITI	Information Technology Infrastructure Support Services
L/C/O	Laboratories/Centers/Offices
NCEA	National Center for Environmental Assessment
NCER	National Center For Environmental Research
NERL	National Exposure Research Laboratory
NHEERL	National Health and Environmental Effects Research Laboratory
NHSRC	National Homeland Security Research Center
NPD	National Program Director
NRMRL	National Risk Management Research Laboratory
OARM	Office of Administration and Resource Management
OEI	Office of Environmental Information
OMB	Office of Management and Budget
ORD	Office of Research and Development
OSA	Office of the Science Advisor
OSIM	Office of Science Information Management
OSP	Office of Science Policy
PPMSS	Professional and Program Management Support Services
SES3	Software Engineering and Specialized Scientific Support Services

Appendix C – Glossary

To promote consistency and understanding in this document, the following terms require definition.

Term	Definition
Agency	This SAP interview category identifies the service delivery impacts of EPA-wide support groups such as OEI, OPA, and OARM on the L/C/Os.
Computing, Storage, Tools	This SAP interview category examines the Information Technology used by researchers and scientists to accomplish their work.
Create and Implement Agile IM/IT Solutions	This SAP Goal enables rapid, affordable, and secure delivery of well-coordinated IM/IT applications, tools, products, and services to meet the operational needs of ORD.
Data Management	This SAP interview category addresses the manner in which ORD researchers and scientists manage their mission-related project data.
Enable Information and Data as a Resource	This SAP Goal seeks to implement a set of formal processes and guidance to promote quality assurance, protection, maintenance, preservation, and sharing of ORD's information, data, and accumulated knowledge.
Facilitate Collaboration and Partnerships	This SAP Goal enables traditional and innovative interaction, discovery, analysis, and sharing among trans-disciplinary individuals and research teams within ORD, EPA, other federal agencies, state and local governments, academia, and other stakeholders
Get The Basics Right	This SAP Goal focuses on delivering core IM/IT customer services through understanding basic customer needs, developing solutions, meeting statutory requirements, accommodating new requests, and monitoring service performance
Improve Communications	This SAP Goal fosters awareness and open communication inside and outside ORD by facilitating awareness, accessibility, and dissemination of ORD data, information, applications, services, and products.
Information Management	Information management represents the processes that support the collection and administration of information from one or more sources and the distribution of that information to one or more audiences.
Information Technology	Information Technology includes the hardware and software tasked with processing, storing and communication of information.
Models, Applications, and Systems	This SAP interview category considers the systems, applications, and models that are used to support mission-related projects and administrative processes.
OSIM Communications & Outreach	This SAP interview category describes the characteristics of OSIM's information exchange with the L/C/Os.
OSIM Service Delivery	This SAP interview category describes the characteristics of OSIM's delivery of services to the L/C/Os.
Strategic Action Plan	A type of plan that defines a discreet set of actionable projects that align with an organization's strategic goals.

