

## EXECUTIVE SUMMARY

NASA's information resources are vast—more than 2,000,000 web pages, thousands of databases and electronic repositories, petabytes of mission and planetary data, and millions of online reports—a wealth of electronic information.

Unfortunately, trying to navigate, access, and sort all that information is often time consuming, difficult, and discourages people from seeking out or sharing lessons learned. In addition, our web presence is our most often accessed image to the public. With close to 2 billion hits a month on NASA sites, the web far surpasses other methods of interacting with the public and with our internal workforce.



One of the primary ways in which to both manage the information on an organization's web space and to provide better, faster access to that information is through the use of a "portal". A portal is an electronic gateway that offers easy access to online resources through a personalized home page that collects links, headlines, and business information most relevant to the user.

While the portal can deliver a clear return on investment within a model of helping to manage NASA's web space, there are additional goals that the portal will help to achieve for NASA's communities as noted below.

- **Public**
  - Support an integrated view for the public into the diverse face of NASA
  - Organize and manage the NASA electronic resources to deliver the intellectual power of NASA to educators, families, and citizens
- **Employees**
  - Increase productivity by facilitating quick access to and sharing of information across organizational and discipline boundaries
  - Create a broader sense of community through sharing news and successes
- **Teams**
  - Allow virtual teams to quickly share and learn from others, while building a legacy for future projects and programs by capturing key team decisions

## PORTAL RECOMMENDATIONS

- **Partners**

- Support management of the end-to-end information flow with our suppliers and outside partners
- Securely and appropriately share the most practicable information with our partners to ensure clear communications and better decisions

Studies have shown that if someone has to search more than 15 minutes for a piece of information, then they are highly likely to simply re-invent the item (a drawing, specification, or finding). Such re-invention encourages errors, increases mission risk, and wastes time that could be better spent in research or project support.

Content is much more than just a listing of links to static web sites. Content is what brings people back to a portal, over and over again. It's what causes them to bookmark it or make it their home page. The content of the portal needs to be informative, accurate, timely, and entertaining. Content management looks at identifying and streamlining our publication processes, understanding where our knowledge resources exist, and capturing and archiving electronic information as it is created and shared.

Portal-related activities have been underway for some time at NASA. Targeted portals for specific communities are currently in operations, for example the Technology Portal for Code R, MyGoddard and InsideJPL as Center-wide portals, and the Process-Based Mission Assurance Knowledge Management System for Code Q. The portal, when deployed, will allow information to flow more freely across the entire organization, bypassing archaic or inadvertent barriers that currently exist. Concepts of the look-and-feel of an InsideNASA portal are shown in Figure A.

Although white papers often stop short of making actual implementation recommendations, that is not the case here. The team members have extensive experience in many aspects of the web, and in bringing up operational portals at NASA. The recommendations at the end of this report address how to deliver the portal framework in the architecture shown in Figure B. Those components highlighted in blue (the Portal Framework box and functionality) are the focus of this white paper and implementation recommendations.

## PORTAL RECOMMENDATIONS



*Figure A. InsideNASA Concepts*

- **Phase 1 will deliver within 10 months to 2000 users**
  - The InsideNASA and MyNASA portals with 5-10 data channels each (only unrestricted data will be presented in Phase 1)
  - A first taxonomy and core metadata recommendations
  - The first content management processes for shepherding electronic information along its lifecycle, from creation to approval to archive

At the end of Phase 1, a review will be held to both document the lessons learned, incorporate them incorporate Phase 2 plans, and to assess a competitive procurement for a long-term portal and content management application. A serious consideration in this effort will be the maturity of the IFMP portal from SAP.

## PORTAL RECOMMENDATIONS

- **Phase 2 will add over the next 18 months Agency-wide capacity to provide**
  - Content management capabilities and a richer taxonomy
  - Increasing support to communities of practice through creation and facilitation of additional data channels
  - Security to allow integrated access to restricted and unrestricted information
  - Integration sign on to decrease the number of passwords an individual needs
  - Gradual scaling up to Agency-wide deployment for internal and external audiences to ~1,000,000 hits per week (based on analysis of current server logs). (During mission events, this number can reach 10,000,000 hits per hour.)
  - Based on experience with the JPL portal and expected fluctuations in demand for access by the public, we recommend that Phase 2 be hosted at a secure managed service provider.

The portal management will follow standards for software development, deployment, and operations. Over the past 18 months, the Jet Propulsion Laboratory (JPL) has brought up a portal. Partially funded by Code AO as a potential pilot for an Agency portal, this activity was very successful during prototyping. The portal management methodology is based on lessons learned by that team<sup>1</sup> and other portal development teams at NASA and in industry, as well as best practices.

This portal deployment is planned to be a portion of NASA's Web Management Services<sup>2</sup> and, as such, will be managed, funded, and conducted under that team's leadership. That team will need to work closely with other activities as shown in Figure B, the many distributed content providers, the SRRs related to secure nomadic access and publications policies, and teams such as the CIO community, Knowledge Management, and IT Architecture. In addition, coordination with other portal activities in development or operations is critical.

NASA is one of the world's premier institutions for knowledge creation and we should bring our knowledge dissemination services and techniques up to the same excellent level.

---

<sup>1</sup> Jayne Dutra, Sauwan Leung, Peter Scott, Douglas Hughes, and Charles Rhoades, *Inside Inside JPL: Project Review and Software Evaluation of the JPL Enterprise Information Portal Prototype*, Jet Propulsion Laboratory, Pasadena, July 27, 2001.

PORTAL RECOMMENDATIONS

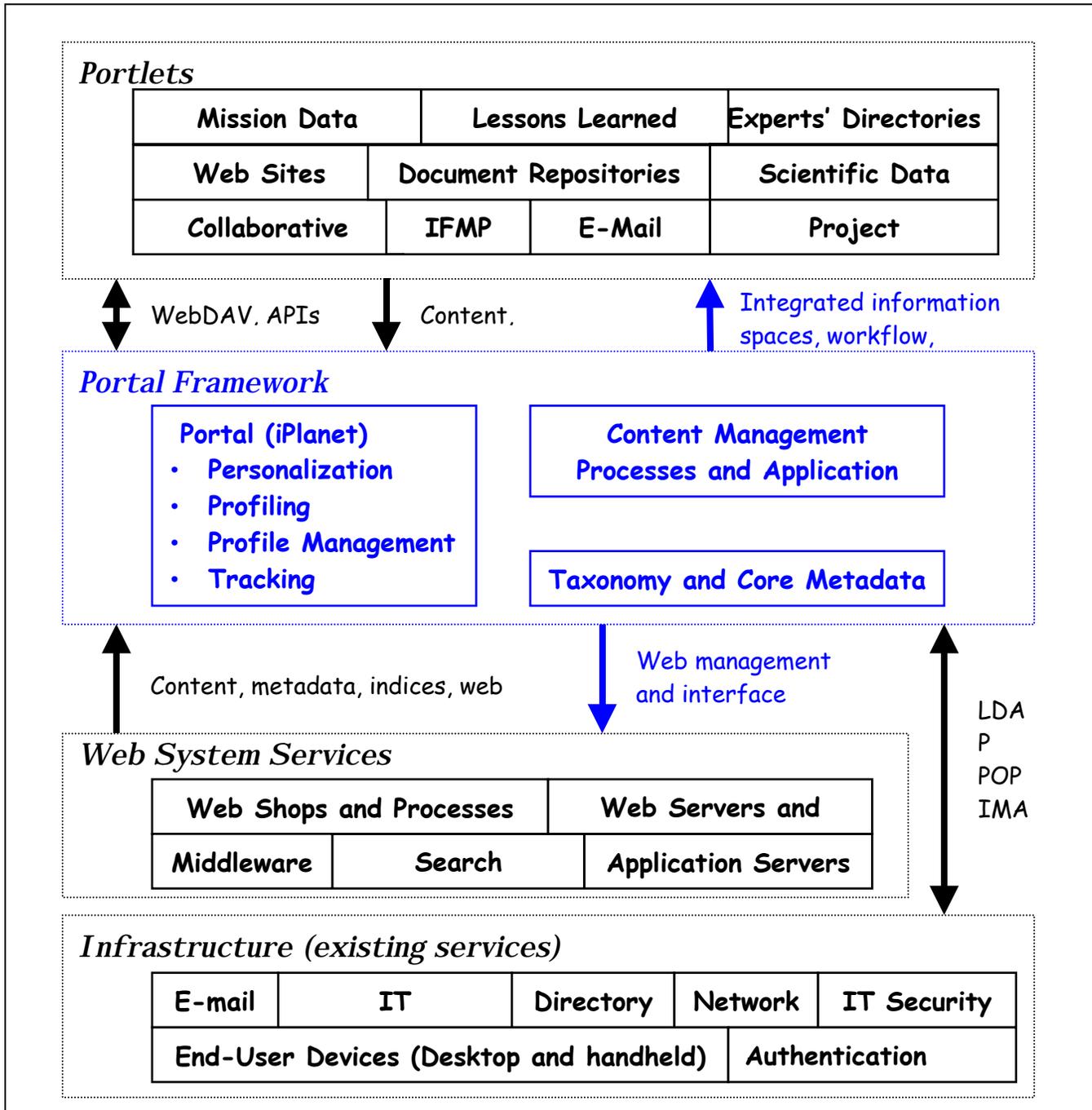


Figure B. NASA agency-wide portal architecture. This report focuses on those activities highlighted in blue (portal framework).

<sup>2</sup> The Web Management Services Team is led out of Code AO and was initiated as part of Strategic Resource Review (SRR) 67 in September 2001.

## PORTAL RECOMMENDATIONS

This report was created collaboratively by many talented individuals. Special recognition is due to the teams who worked on each section. Team leaders are shown in italics.

- **Requirements:** *Chris Pino*
- **System Architecture:** *Steve Prahst*, Douglas Hughes, Andy Schain, Brian Dunbar, Chan Kim, Chris Shenton, Bill Price
- **Information Architecture:** *Jayne Dutra*, Lisa Nayman, Andy Schain
- **Content Management and Business Processes:** *Justin Jackson*, JoAnne Rucker, Jayne Dutra, Lisa Nayman, Robin Land, Brian Dunbar, Nancy Kaplan
- **Portal Management:** *Douglas Hughes*, Steve Prahst
- **Implementation Plan:** *Jeanne Holm*, Douglas Hughes, Manjula Ambur, Jayne Dutra