FY 2011 to FY 2015

SMITHSONIAN INSTITUTION

SITP STRATEGIC OVERVIEW

Smithsonian Information Technology Plan | OCIO

Message from the Chief Information Officer

In FY10 the Smithsonian began implementing its new strategic plan a vision that will require heightened use of technology to respond to challenges and grasp opportunities of the 21st Century. The introductory section of the Smithsonian's Strategic Plan captures what is possible when we successfully combine technology and the opportunities it brings to the knowledge that *is* the Smithsonian.

> *Imagine being able to access all known information about an insect species—whether it was discovered 100 years or 100 days ago – with one touch of the screen. Picture a world in which you can not only see Smithsonian objects online but also hear them and watch them in motion.*

During the past year to support the new strategic plan, the Office of the Chief Information Officer (OCIO):

- Expanded the Enterprise Digital Asset Network (EDAN) to include information from 30 Collections Information System datasets making 6.4 million records with 508,000 images available to the public via the Collections Search Center; and created a mobile version of the Collections Search Center.

- Redesigned the main Smithsonian website, as part of a partnership with the Office of Communications and External Affairs, making it easier for our virtual visitors to find the information they seek from across the institution, and highlighting our content in social media venues—and for the first time provided a multilingual experience with real time translation into 52 different languages.

- Shifted from planning to operations in providing centralized IT resources to meet Smithsonian research needs by expanding the Institution's Hydra High Performance Computing Cluster (HPCC), and collaborating with research units to provide Institutional-pricing for Genomic research software licenses.

As units across the Smithsonian update their individual strategic plans to respond to the four Grand Challenges and work towards implementing the strategic objectives, the Office of the Chief Information Officer will respond to these evolving plans as we continually refine our own plan.

Sincerely,

Ann T. Speyer **February 14, 2011**

Cover Photo Credit:
San Rosemanico de Assisi's Flickr photo stream,
www.flickr.com/photos/rosemania/2173346829

Photo Credits:
Photos inside this year's publication are all from the Smithsonian.


Chandra: Crab Nebula, SAO,


Folio from a Mihr u-Mushtari by Muhammad 'Assar of Tabriz; Mihr Feasting with Kayvan, the King of Kharazm, dated 1523 C.E., FSG, Purchase F1932.7,


Paleontology Exhibit, Stegosaurus-Armored Dinosaur, NMNH, negative number 43494


33c Computer Art and Graphic Single Stamp, NPM, Museum ID 2000.2020.277


Snowflake Study, by Wilson A. Bentley, 1890, NMAH Image ID RU 31 Box 12 Folder 17


Victorian Gates on A&I Building, SIA, Negative # 79-10672-25


Incandescent lamp with coiled tungsten filament, NMAH Object ID 1992.0342.23


George III Peace Medal, 1790-1795, NMAI, Catalog number: 24/2033


Dr William Mulloy Lecturing to Tourist Group Near Moai (Lava Stone Effigy Figures) on Ahu (Platform) 1968, NMNH, NAA INV 04948015


Hermit Crab (glass) by Tim Jerman, 2000, SAAM, Acquisitions Fund 2000.26.1


Spider web, *Araneidae, indet*., Thailand, NMNH, Image ID 03x14_0028


Poster, Advertising, Commercial Aviation, *Across the U.S. and Overseas Fly TWA Trans World Airline*, 1952, NASM, Inventory number: A19900688000


"Nothing else in the world...not all the armies...is so powerful as an idea whose time has come."--Victor Hugo, The Future of Man. From the series Great Ideas of Western Man. By Robert Vickrey, SAAM 1984.124.297


Bald Eagle by Jessie Cohen, NZP photographer

Contents

A. Mission, Vision, and IT Strategy

The Smithsonian Institution is a trust instrumentality of the United States founded in 1846 in response to the will of Englishman James Smithson who bequeathed the whole of his property to the United States of America with the mission "to found at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge."

In the 160 plus years since that time the Smithsonian has grown as a cultural and scientific complex of museums, research centers, and offices to include 19 museums and galleries, the National Zoological Park, and 9 research centers. In addition to Washington, DC and its metropolitan area, the Smithsonian maintains facilities and staff in New York City, New York; Cambridge, Massachusetts; Fort Pierce, Florida; near Tucson, Arizona; and Panama. The Smithsonian employs approximately 6,000 staff and 6,500 volunteers; has over 137.2 million collection objects and specimens, more than 100,000 cubic feet of archival materials, and 1.8 million library volumes and materials; and in FY 2010, hosted nearly 182 million visitors to its public websites.

Strategic Vision

The Smithsonian's newly minted vision is for the Institution to shape the future by preserving our heritage, discovering new knowledge, and sharing our resources with the world. Information technologies, properly applied, will play a pivotal role in achieving this vision especially the latter of sharing our resources with the world in ways previously unimagined through Web and emerging virtual technologies.

OCIO Mission

To maintain and modernize the Institution s information technology and telecommunication systems, services and infrastructure in a secure, standards based environment to best meet the priorities of the Institution and its Grand Challenges.

Information Technology Vision

To develop and maintain information technology and telecommunications solutions such that anyone, anywhere can access, explore, contribute and use Smithsonian information to inspire their own and others knowledge and discovery.

Smithsonian Grand Challenges

The Smithsonian's strategic plan (FY 2010 to FY 2015) positions the Institution squarely in the 21st century in interpreting and executing its mission for "the increase and diffusion of knowledge". In doing so, the Institution defined four Grand Challenges which the Smithsonian is uniquely equipped to meet. These Grand Challenges provide an overarching strategic framework, and reflect the emphasis on interdisciplinary outlook, collaboration, establishing an entrepreneurial culture, and the continuing commitment to excellence and accountability.

Unlocking the Mysteries of the Universe

We will continue to lead in the quest to understand the fundamental nature of the cosmos, using next generation technologies to explore our own solar system, meteorites, the Earth's geological past and present, and the paleontological record of our planet.

Understanding and Sustaining a Biodiverse Planet

We will use our resources across scientific museums and centers to siginificantly advance our knowledge and understanding of life on Earth, respond to the growing threat of environmental change, and sustain human well being.

Valuing World Cultures

As a steward and ambassador of cultural connections, with a presence in some 100 countries and expertise and collections that encompass the globe, we will build bridges of mutual respect, and present the diversity of world cultures and the joy of creativity with accuracy, insight, and reverence.

Understanding the American Experience

America is an increasingly diverse society that shares a history, ideals, and an indomitable, innovative spirit. We will use our resources across disciplines to explore what it means to be an American and how the disparate experiences of individual groups strengthen the whole, and to share our story with people of all nations.

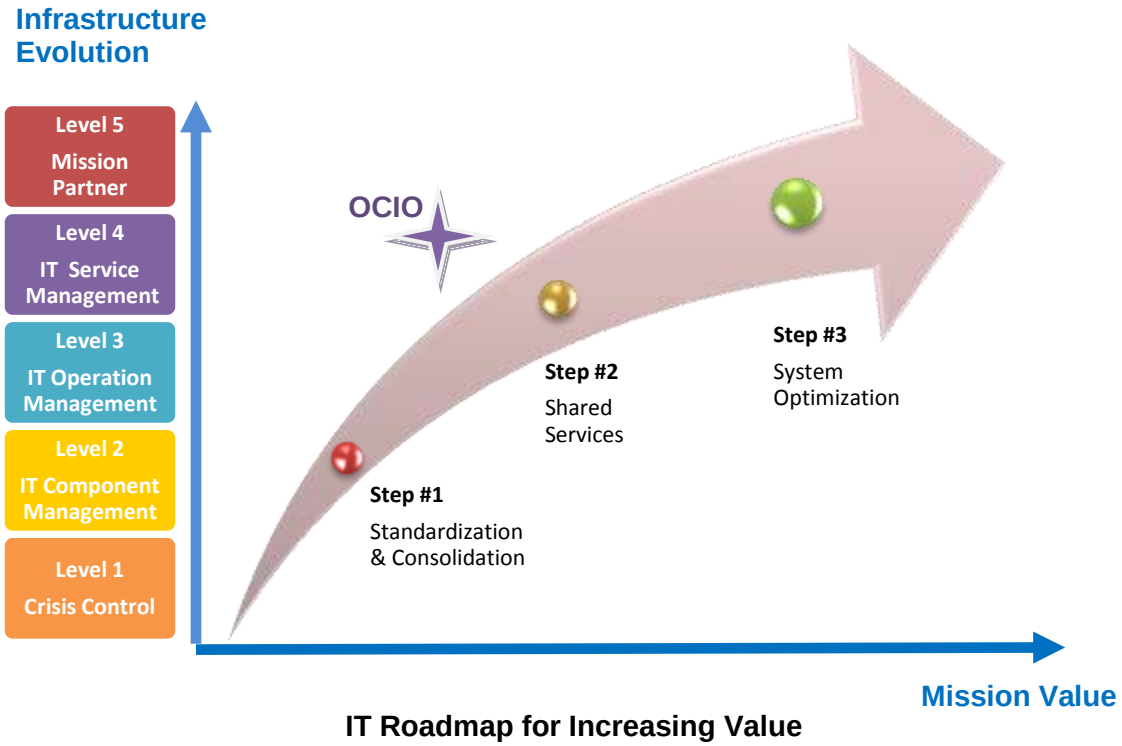
Many of the strategies in the Smithsonian's strategic plan will increase the amount of digital data and assets created which will drive an expansion of the Smithsonian's IT infrastructure. Similarly, the strategic priorities to broaden access and cross boundaries will drive the development of both new and expanded interoperable systems, and the need to increasingly assess and negate security risks as the Institution shares more with the World.

IT Strategic Approaches

IT will be better positioned to increase its value to the mission by aligning the IT vision, strategies, and direction with the overall Smithsonian mission, vision, and goals to ensure that the Institution can meet demands for ready access to information related to visitor services, collections, research, exhibitions, and administrative processes.

Strategic planning is the process that tries to make explicit the current and future state, as well as the critical changes that need to be made between these two points. During this process, we must answer these questions:

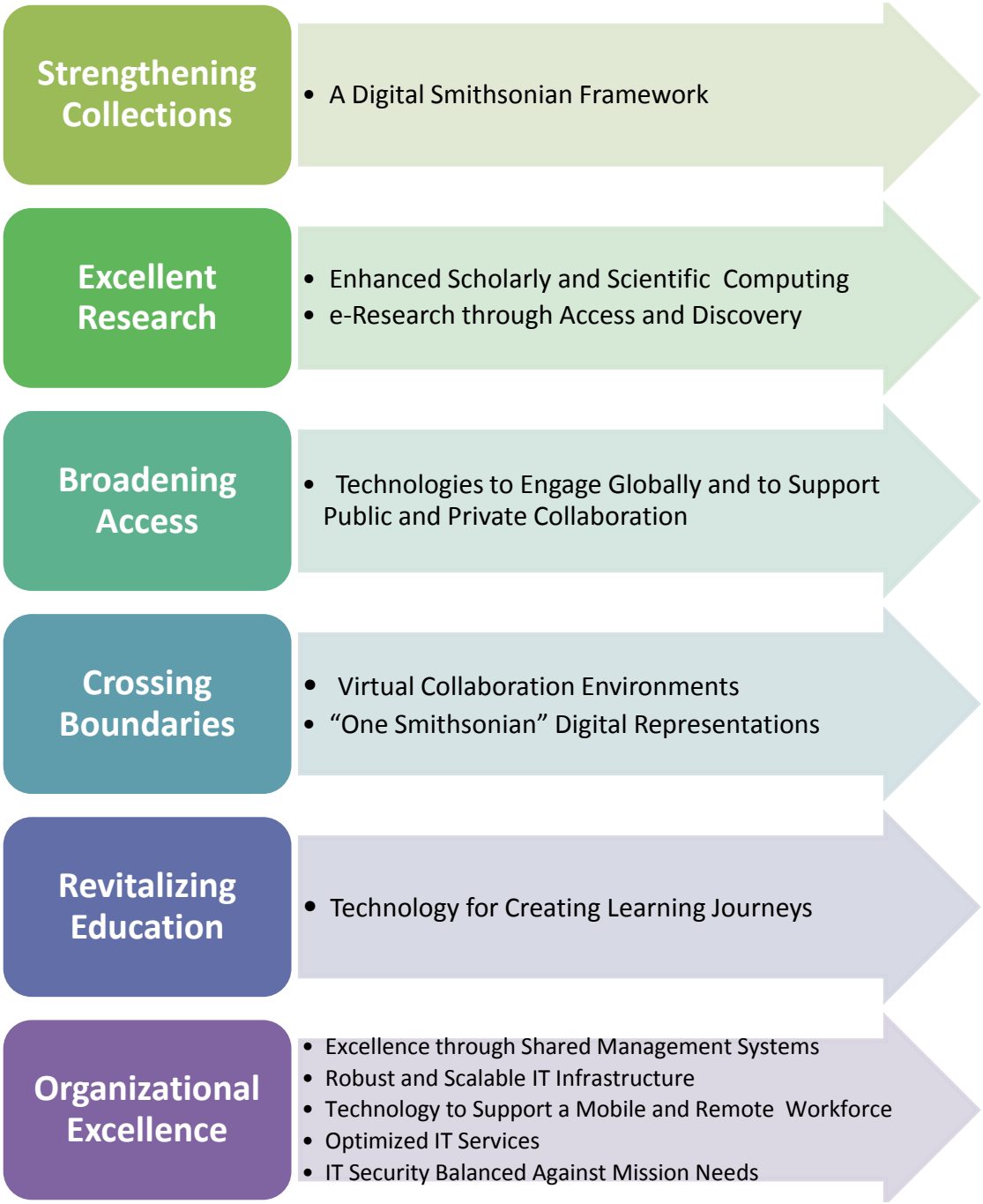
1. What are the Smithsonian's priorities?
2. How can IT be used to overcome challenges?
3. How can IT help the Smithsonian succeed?



IT Roadmap for Increasing Value

Strategic Priorities Drive IT Goals

The Smithsonian defined six strategic priorities, which will direct the allocation of resources during the planning period. From each of these priorities, we have identified the following strategic goals for information technology, and will work towards developing IT systems and infrastructure in an affordable and strategic manner.



Establishing objectives and goals provide direction to the Smithsonian's IT program based on unit needs, especially those of shared services and infrastructure. In this annual update to the plan, the IT goals were developed in alignment with the strategies and goals defined in each of the three Institutional strategic plans which define strategies for the Institution, digitization, and Web and new media.

Each of these plans clearly states the dependency on information technology as an integral component to fulfill the vision and objectives which they contain. For the reader's convenience icons are used to reference the primary source that drove each IT objective.

Smithsonian Institution Strategic Plan, Fiscal Years 2010-2015

Creating the Digital Smithsonian, The Smithsonian Institution Digitization Strategic Plan, 2010-2015

Smithsonian Institution Web and New Media Strategy, Version 1.0, Fiscal Years 2010-2015

Beginning with this year's plan, we have annotated those objectives that are currently funded and those we desire to achieve [target] should funding become available. At this time, initiatives reflect the anticipated FY 2012 President's Budget submitted to Congress.

Throughout this planning period, we expect that the functional and organizational strategic plans across the Institution will be updated to reflect the new strategic direction of the Smithsonian. As new information requirements are set forth by these updated plans, future releases of the *Smithsonian Information Technology Plan* will be updated accordingly.

B. Strengthening Collections

For more than two decades the Smithsonian has been digitizing information about its objects and specimens in its collections. With the evolution of digitization, what to digitize has evolved to include meaningful objects and related information which, while they do not meet the stringent requirements of a collections object, are valuable in the information and knowledge they impart both by themselves and as complementary information to a collection item. The Institution is also beginning a conversation that research data, which currently is not an official Smithsonian collection, should be curated with similar stewardship responsibilities as a collection which could substantially expand the demands for our collections information systems (CISs) and repositories. In this plan for building IT systems, we are assuming that research data will need to be curated similarly, if not as, an official collection.

frame·work (frām'wûrk) n.

A structure for supporting or enclosing something else, especially a skeletal support used as the basis for something being constructed.

The Institution needs to house digital assets which provide digital surrogates of our physical collections, as well as, increasingly "born digital" collections and data such as digital audio files, digital photographs, and digitally captured data which only exist in digital form. The technology needed to store, and access these digital treasures is readily available in the commercial market and we will continue the effort to build a robust and adequately sized digital infrastructure.

In the best instances new digital assets are being stored and managed in enterprise-level CISs and in the Digital Asset Management (DAM) system—but even then may only contain derivatives and not the preservation copy of the digital asset. At the same time, many smaller digitization efforts do not have access to these systems and are at increased risk due to the lack of the level of support and robust protections generally provided in enterprise level solutions; and much of our legacy assets and information need to be located and migrated into enterprise solutions to protect them and make them accessible.

While we have recently made progress with modest increases to fund and mature existing IT systems and infrastructure, we will need to make increased resources available to the unit staff who must locate existing digital assets; move them into these enterprise solutions; and research the metadata that makes these assets meaningful to ensure that we provide electronic access to them consistent with any applicable restrictions set forth by the holding units.

A Digital Smithsonian Framework

Goal: A Digital Smithsonian Framework

Build a consolidated, secure IT infrastructure, enterprise solutions, and framework particularly storage, backup, and network connectivity which enables the exchange of digital assets, including related metadata, regardless of where they reside to meet the expanding demands of and for digital assets.

Objectives during this planning period

1) Determine the infrastructure and enterprise systems needed to move from our current state to our target state of interoperable systems for sustainable access, preservation, and sharing of digital assets.

   - Ensure adequate and robust network connections to reach beyond the Smithsonian and allow others to interact with the Digital Smithsonian in a secure manner. [Funded]
   - Continue to mature the implementation of the Institution's major collections information systems (CISs), and to identify robust and supportable CIS solutions for units whose needs are presently not addressed. [Funded]

2) Evolve Smithsonian systems toward the development of Trusted Digital Repositories (TDR) for digital assets requiring sustainable preservation and access; leverage enterprise solutions—including working with data owners to develop and implement full life-cycle Data Management Plans for their digital data and assets.

   - Define requirements for a scholarly and research data TDR at the Smithsonian. [Funded]
   - Develop repositories with the underlying required storage, backup, and disaster recovery solutions to support vast amounts of digital data and collections at the petabyte scale. [Target]
   - Begin to work with data owners to implement full life-cycle Data Management Plans for their digital collections and assets. [Funded]
   - Plan and implement the migration of datasets to managed enterprise storage from a variety of storage devices. [Target]

- Develop data management solutions and workflows for managing user-generated content and metadata. [Target]

3) Continue to expand the enterprise Digital Asset Management (DAM) system with adequate storage and backups 

- Expand functionality to ingest and output video and audio assets. [Target]
- Expand available storage managed by the DAMS. [Target]

4) Continue to develop and enhance user-friendly tools to facilitate the use of digital assets by Smithsonian staff. 

- Develop additional EDAN Web widgets and delivery services- including mobile and “what’s on exhibit?” functionality. [Target]

C. Excellent Research

All four of the grand challenges defined in the Smithsonian's strategic plan include creating new research material which increasingly will be born digital data.
The Smithsonian's new strategic plan defines a vision of not only excelling in answering these scientific and scholarly questions, but also challenges the Institution to share and interpret the data and knowledge in a cross-disciplinary approach that combines our disparate strengths in ways that increase perspective and impact.

Scientific and scholarly data exist in many different types and formats subject to varying legal, cultural, protection, and practical constraints. They are often used in different ways according to their contexts and have varying life cycle requirements. At the same time, there is increasing demand from many different directions to share data across national, disciplinary, organizational and programmatic boundaries for analysis and interpretation. To remain a leader in our scientific communities, the Smithsonian will increasingly need to have the means to share its data driving new IT requirements.

Through the long-standing efforts of our scientists, the Smithsonian has been among the leaders in understanding key scientific questions of the day. Most of these problems are not simple. Communicating the complex science behind the dynamic processes is difficult, but necessary. The Smithsonian can leverage technology to extend its reach by communicating its research in such a way so that our political leaders and the public can understand it, so that global action can be mobilized to help our planet become more sustainable.

> Increasingly, the products of science and the starting point for new research, are digital and most often "born digital."
>
> All elements for the pillars of science—observation, experiment, theory, and modeling—are transformed by the continuous cycle of generation, access, and use of an ever increasing range and volume of digital data.

In this plan the storage, access, and preservation of research data is included in the goal "A Digital Smithsonian Framework" where research data that is not considered transitory in nature should be handled as a collection from an IT perspective. This is particularly true for data which cannot be recreated such as environmental data.

Enhanced Scholarly and Scientific Computing

Goal: Enhanced Scholarly and Scientific Computing

Develop interoperable systems for the long term preservation of Smithsonian science and scholarly research, particularly environmental data and other data which cannot be recreated; and provide the necessary instrumentation and tools for data analysis and interpretation.

Objectives during this planning period

1) Enhance scientific computing through support of high-performance computing and advanced data collection, management, and delivery systems.

   - Modernize scientific computing workstations (particularly Suns and Macs). [Funded]
   - Establish a centrally funded laptop replacement program for researchers conducting field research. [Target]
   - Continue to enhance the Smithsonian-shared High Performance Computing Cluster housed and maintained in the Smithsonian's Data Center in Herndon consistent with recommendations from the Office of the Under Secretary for Science's Computational Strategies Working Group. [Target]

2) Increase support of the operations of existing, and development of new, scientific instrumentation, including major laboratory-based analytical instrumentation, and foster the development and use of cutting-edge equipment, technologies, and informatics that can advance biodiversity and ecosystem research.

   - Utilize new, specialized applications, such as geographic information system (GIS) tools, which allow annotation of scientific information with corresponding location data, leading to better and faster interpretation of the material collected. [Target]
   - Enhance the Smithsonian's platforms for long-term research on biodiversity and ecosystems, particularly the Smithsonian Institution Global Earth Observatories (SIGEO). [Target]
   - Improve the IT infrastructure and systems needed to strengthen and secure the long-term conservation of collections, including DNA and biomaterials banks. [Target]

e-Research through Access and Discovery

Goal: e Research through Access and Discovery

Develop interoperable systems to enable re use, re purposing, and e research through access and discovery. The digital dimension of science is global and requires solutions that should support communities of practice while promoting data integration and interoperability.

Objectives during this planning period

1) Provide Web-based and New Media tools and mechanisms to highlight and encourage public engagement with Smithsonian research and researchers through new and existing blogs, Web sites, mobile platforms, geospatial information exchanges, and other channels.

   - Integrate EDAN with natural sciences and all history, art, and culture collections to enable access and discovery. [Target]
   - Develop virtual research environments as a component of Smithsonian data repositories functionality. [Target]

2) Provide collaborative tools for researchers, educators (including citizen scientists and citizen scholars) and communities of practice--including but not limited to Web-based and new media tools to support public and private collaboration.

   - Enable discovery of and access to Smithsonian data repositories to support collaborations internally and externally. [Target]
   - Develop systems to enable new ways to integrate and share digital Smithsonian science collections in formats appropriate to different audiences. [Target]
   - Expand the functionality of the Smithsonian's research repository to link research datasets to published articles. [Target]
   - Implement web-based and stand-alone systems to improve long distance access to Smithsonian resources while conducting remote-research. [Target]
   - Work with data owners to develop and implement a registration process for digital science datasets (e.g., Digital Object Identification (DOI)) to facilitate the access and use of Smithsonian data. [Target]

D. Broadening Access

The Smithsonian seeks to create a trusted, relevant, and sustainable online presence where educators, researchers, and the public come together to appreciate, explore, and interact on topics of art, culture, history and science, to foster lifelong relationships, and to create a global community for exploration of ideas and sharing of knowledge.

The social networking phenomenon is turning our consumers into producers who now spend significant time online socializing and producing content. Visitors to our websites will increasingly want to do their own interpretation and engage our experts. The Institution launched a web strategy initiative in FY 2007 to allow us to understand and adapt to these dynamic changes in a rapidly evolving environment, and approved a Web and New Media Strategy in 2010 to deliver on this promise.

Technologies to Engage Globally and Support Public and Private Collaboration

Goal: Technologies to Engage Globally

Use Web and new media enabling technologies to welcome and engage billions of visitors of varying ages, learning styles, first languages, and cultural backgrounds as partners in knowledge and discovery.

Objectives during this planning period

1) Enhance virtual visitor's experience when engaging through the Web and new media.

- Create an audience segmentation plan that describes and prioritizes roles, online goals, and value to the Smithsonian, and correlate that plan to the structure/ interaction flows of Smithsonian Web sites. [Target]
- Provide expanded metrics and evaluation tools and services for Web and new media to better understand and engage our visitors. [Funded]
- Provide shared tools and reuse of code to leverage by other units (e.g., SI.EDU main website templates which incorporate accessibility and multilingual capability), [Funded]
- Develop a pool of internal consultants and staff to support the core work of Smithsonian experts and Web and new media practitioners in building and maintaining the Institution's Web presence. [Target]

2) Strive for excellence in Web publishing fundamentals by building tools, systems, and protocols to:

- Improve Search Engine Optimization of our websites. [Funded]
- Improve information architecture making it easier for visitors to find similar and related content. [Target]
- Capture and maintain best practices for emerging mobile application development. [Funded]

3) Expand social networking capabilities by continuing to develop formal relationships and pan-Institutional efforts to deliver our digital content to our online visitors' social networking sites of choice.

- Connect people from diverse cultures through multimedia channels, by providing presences such as in virtual worlds, mobile applications, and web-conferencing. [Funded]

E. Crossing Boundaries

Collaboration has not required a physical presence since the evolution of the written letter, the telegraph, and the phone. However the quality of creating an environment where people in multiple remote locations may collaborate together in real time is increasingly improving through technologies such as enterprise-level collaboration software, videoconferencing, web-conferencing and social media applications such as wikis that can enhance and speed collaboration by sharing the same physical space. We know that many audiences regard these virtual forms of collaboration as “normal”, while others are learning to adapt to and leverage these new technological opportunities to communicate and collaborate in the democratization of information.

We will pilot emerging technologies that enable these virtual collaborations and crossing of boundaries. When successful, we will scale them for Smithsonian-wide implementation and share these innovations with other institutions. We will also look to other institutions both within and beyond our traditional communities of practice to learn about new technologies and how they can be used to better implement the Smithsonian’s new strategic plan.

Our technology developments will need to be nimble to support the challenge of crossing boundaries, where work that was once considered solely the domain of Smithsonian experts may in the future be performed as an informal partnership with participants who were once solely our audiences.

Virtual Collaboration Environments

Goal: Virtual Collaboration Environments

Provide tools and services to facilitate creating virtual environments and experiences in a collaborative manner which cuts across disciplinary and organizational boundaries throughout the Institution, as well as with our partners and stakeholders.

Objectives during this planning period

1) Provide shared tools and services to involve audiences as partners in the increase and diffusion of knowledge through the use of the Web and new media – in particular, to enable the sharing of our authority as experts.

   - Develop the Smithsonian Commons as a hub for collaboration inside and outside of the Institution. [Target]
   - Continue to enhance our visitors' experience through the use of participatory technology when enjoying a physical exhibit (e.g., smart phone applications, multi-touch tables). [Funded]
   - Redesign the Smithsonian Intranet, Prism, in Sharepoint. [Funded]
   - Implement automated forms in Sharepoint for staff use. [Target]

2) Develop a virtual portal for the exchange of information and knowledge about digitization at the Smithsonian.

   - Develop a public digitization Web presence. [Target]

3) Enable the collaboration with Federal agencies, international organizations, non-government cultural and educational organizations, and other partners to develop shared-systems and / or exchanges of data—including evaluating options for implementing web-based tools to enable collaboration with external and internal partners.

   - Disseminate information and raise awareness through Web-based portals, for example, the Encyclopedia of Life, the Consortium for the Barcode of Life, the Biodiversity Heritage Library, and the Ocean Portal, as well as invasive species initiatives. [Funded]
   - Initial implementation of a secure "Skype-type" alternative web-based video conferencing solution for staff and external people with whom we collaborate. [Funded]
   - Implement a Sharepoint extranet for external collaboration. [Target]

"One Smithsonian" Digital Representations

Goal: "One Smithsonian" Digital Representations

Enable the creation of digital representations on the Web and in using new media that cut across disciplinary and organizational boundaries while preserving the integrity and the uniqueness of every Smithsonian unit.

Objectives during this planning period

1) Seek technological solutions to aggregate Smithsonian information in a flexible manner.

- Develop the Smithsonian Commons to aggregate information in new and innovative ways that cuts across organizational boundaries. [Target]
- Expand the usage of EDAN to feed content to other websites and environments [Funded]
- Create a shared navigation structure that encourages deep exploration of unit-based content and of content across all units. [Target]
- Develop Mobile Mall application as the first pan-Institutional mobile applications. [Funded]
- Streamline procurement processes and increase flexibility for Web and New Media contracts under $50K. [Funded]

F. Revitalizing Education

Smithsonian content experts and educators will need to work together to develop educational experiences that intentionally blur the lines between formal and informal education in order to meet the needs of our constituents from early childhood exploration to formal learning to continuous lifelong exploration. To do this, the Institution plans to take advantage of a range of interactive, Web-based technologies to reach new generations in the medium with which they voluntarily engage in daily.

- The social networks that did not exist until recently (blogs, twitter, YouTube, Facebook, podcasts, and Web cams) have emerged as a primary agent for communicating directly with students, educators, and life-long learners in two-way and group conversations.

- Mobile devices and handhelds continue to transform the method and frequency of how people get information, making it a seamless aspect of their life. Today, people of all ages routinely carry and interact via smart phones to find the information they need through the Web. The Smithsonian must leverage these and other yet-to-be-defined emerging devices, as cost-effective platforms for delivering Smithsonian content.

- Educational gaming provides tremendous potential for extending the educational mission of the Smithsonian. Games tap into students' intrinsic motivations to challenge themselves, master new skills, and learn new concepts especially through immersive virtual role-playing. Through games students can scaffold process skills and knowledge that will subsequently be reinforced through more formal instruction. These games have their greatest impact if they are ones that students engage with under their own initiative, and if they are situated firmly within the informal space. The greatest target of opportunity is for K-12 students, though thoughtfully designed games can work for older players as well.

Technology for Creating Learning Journeys

Goal: Technology for creating learning journeys.

Use existing and emerging technology in developing / experimenting with digital learning environments and increase the connections between those environments and the rest of the Institution's digital content, research, and communities.

Objectives during this planning period

1) Experiment with new technologies to advance the theory and practice of innovative informal education and the use of technology to drive educational and outreach opportunities through the Web—in partnership with Smithsonian educational specialists-- with strong linkages to the formal education system.

   - Build on the successful Digital Media Labs for tweens[1] by providing the enabling technology to implement lessons learned and expanding the program to more Smithsonian venues. [Funded]
   - Continue to provide the enabling technology and IT services to support the Smithsonian's contributions as a partner in the SHOUT which invites educators and students to connect online with experts in the field, share ideas, and collaborate with people around the world committed to solving today's environmental challenges. [Target]
   - Extend outreach in schools through new media platforms that support distance learning, such as through the virtual education conferences. [Target]
   - Incorporate technology–enabled learning opportunities into physical exhibits to enhance the scientific literacy for visitors of all ages. [Target]

2) Strengthen capabilities for the education management within the Institution, from setting goals to administering projects for selecting, registering, evaluating and viewing or downloading the accompanying pre- or post-visit resources, locate information about any exhibits or collections which may relate to the program.

   - Enhance Education Data Gathering & Evaluation (EDGE) system to capture educational programming that take place on social networking sites and through the use of new media technology. [Target]

[1] A child between 8 and 14 years of age.

- Enhance EDGE to record the evaluation of educational programming. [Target]
- Enhance Smithsonian On-Line Academic Appointments (SOLAA) system to include a registration process which will allow academic program coordinators to register participants using the system. [Funded]

G. Organizational Excellence

The programmatic systems—collections, scientific research, education, exhibitions, outreach, and administrative—represent the primary automation support provided to Smithsonian museum, research, and education missions. The IT infrastructure encompasses the deployed foundation hardware, voice and data communications, system software, and distributed computing framework software linked together through the Smithsonian network (SInet). The Institution-wide communications network provides comprehensive end-to-end data transmission linking servers, shared printers, and workstations. SInet provides services to more than 6,000 end-users along with access to administrative and program applications and databases throughout the Smithsonian.

Smithsonian staff need to be able to receive and send email, access the Internet, and connect to the Smithsonian network remotely whether when working from home or half-the-way around the world.

As the Smithsonian's presence on the global Web continues to expand, the Smithsonian must address IT security issues proactively.

Excellence through Shared Management Systems

Goal: Excellence through Shared Management Systems

Provide Smithsonian staff with the systems, and access to the information contained within, that enable them to perform their jobs and support the advancement of the Smithsonian mission while ensuring resources are wisely managed in a manner that reflects the Smithsonian's status as a public trust.

Objectives during this planning period

1) Enhance and expand the Financials and HRMS ERP systems in a continued effort to strengthen internal controls including:

- Perform a major upgrade to ERP environment, hardware and applications on a recurring basis. [Funded]
- Expand support for managing projects, grants and contracts, reporting, and replace additional legacy systems. [Funded]
- Continue to develop and enhance automated reports. [Funded]
- Complete the automation of the processing of transactions between the Institution and our banking partners. [Funded]
- Conform to new Department of Treasury requirements (GTAS-Government-wide Treasury Account Symbol) for monthly, quarterly, and annual reporting. [Funded]
- Implement an Earned Value Management System (EVMS). [Funded]
- Expand functionality by enhancing and upgrading to the latest releases of software for WebTA, and Hiring Manager throughout the year, as needed. [Funded]
- Implement self service for trust employees to update their benefit selections. [Funded]
- Integrate the new secure Advancement Information System with the Institution's Financial ERP system. [Target]

2) Implement electronic Official Personnel File (e-OPF) system. [Target]

3) Create systems to electronically manage and provide on-demand access to critical information on the existence of hazardous materials, access to facilities' Annual Safety Inspections, and find geo-tagged locations of asbestos and other safety hazards at the Institution—all of which are needed to determine whether there are any known conditions that an emergency response team needs to be aware of/ or to provide information on the layout of the facility.

   - Expand the implementation of Hazardous Materials tracking system and incorporate MSDS Library functionality. [Funded]
   - Provide archival abilities for METR Inspections and continue to expand its use by Smithsonian units. [Funded]
   - Continue to incorporate functionality into OFEO's GIS to identify locations of safety hazards. [Target]

4) Enhance the Facilities Management System

   - Implement capital planning and project management functionality with integration between FacilityCenter and the ERP and with the ability for Smithsonian staff to view facility specific data from PRISM. [Funded]
   - Implement work management enhancements--specifically implementing Smithsonian-wide Self-service Facilities and a Special Event process to replace the SI Form 23 process and to facilitate the real time processing of service requests. [Funded]
   - Obtain a Security Accreditation for the Building Automation System; and integrate FacilityCenter with the Building Automation Systems and Asset Reliability Systems for asset reliability data and work tasks. [Target]

5) Evaluate and begin to implement a pan-Institutional Constituent Relationship Management System for members, customers, prospects, and other audiences. 

6) Define the requirements for a pan-Institutional electronic records management system. [Target]

7) Implement a web-enabled Smithsonian Metrics Dashboard. [Target]

Robust and Scalable IT Infrastructure

GOAL: Robust and Scalable IT Infrastructure

Apply an enterprise approach to managing the Smithsonian's IT infrastructure centrally to create a standards based IT infrastructure as the foundation for robust and scalable distributed systems and commodity services in a secure and scalable manner.

Objectives during this planning period

1) Grow the IT infrastructure to meet emerging mission needs—particularly in the area of enterprise storage, backup, data management and disaster recovery systems. [Target]

2) Continue to maintain high-capacity, resilient, and secure data, voice, video networks, and increase the capacity for data transmission in a complex heterogeneous mix of wireless, microwave wide-area-network and Ethernet transport methods.

   - Install VoIP telephony at STRI and SERC, replacing outdated systems. [Funded]
   - Upgrade telecommunications at Whipple Observatory. [Funded]
   - Upgrade to 10 Gb switches in the Smithsonian's Data Center. [Funded]
   - Provide ubiquitous free public WIFI within the walls of our museums to enhance the visitor's experience, expand educational opportunities, and exhibit dimensions. [Target]

3) Consolidate commodity services, staff, websites and databases in use across the Institution to achieve economies of scale, facilitate the sharing of information, increase supportability. [Target]

4) Regularly replace IT infrastructure components on an industry best practice replacement cycle in accordance with the evolving Smithsonian-wide technology architecture. [Funded]

5) Reduce the environmental footprint of the Smithsonian's data center.

   - Provide additional services, as appropriate, through Software as a Service (SaaS). [Target]
   - Leverage emerging technologies for cloud computing and storage. [Target]
   - Virtualization and consolidation of servers and storage. [Target]

Technology to Support a Mobile and Remote Workforce

GOAL: Technology to Support a Mobile and Remote Workforce

Provide mobile and remote access technologies and services to support staff whose duties require them to work away from the traditional desk environment.

Objectives during this planning period

1) Provide technology tools and systems to support staff whose work requires them to be widely dispersed geographically and /or logistically.
   - Deploy a new Citrix farm to improve Smithsonian staff remote access to internal research platforms. [Funded]
   - Expand number of Citrix user licenses. [Target]
   - Add functionality to Citrix for SmartPhone[2] users. [Target]
2) Deliver services to Smithsonian staff in a manner which is more conducive to the expectations of Millennials[3] who are now joining the Smithsonian as staff, students, and fellows, and to retain a diverse, highly-skilled, and technologically competent workforce.
   - Provide online training resource (Microsoft IT Academy) where classes may be taken from any location at the student's convenience. [Funded]
   - Continue to expand the secure wireless network to provide increased coverage for staff and official visitors in both public and staff-only spaces. [Funded]
   - Pilot mobile applications of WebTA to allow a mobile workforce to submit their timecards and for supervisors to validate them from smart phones. [Funded]
   - Provide instant messaging functionality that meets IT security requirements. [Target]

[2] At this time iPads and iPhones cannot be used with Citrix because they are not compatible with Entrust two-factor authentication required for security; and only smart phones are compatible with this security requirement. OCIO will continue to monitor future releases for compatibility.

[3] Millennials – The generation born between 1980 and 2000 who grew up with technology as an ingrained part of their daily life. They tend to work in a social and collaborative manner, and will want the same level of access to technology tools that allow them to remain and leverage their social networks virtually at work as they do in their personal life.

Optimized IT Services

GOAL: Optimized IT Services

Continuously re evaluate and adjust the delivery of IT services across the Institution to increase user satisfaction, reduce costs, and achieve a balance between centralized and de centralized services.

Objectives during this planning period

1) Identify methods to satisfy IT requirements with decreased financial and environmental costs—such as through negotiated pan-Institutional contracts, and shared equipment and services.

   - Complete assessment of printer/copy/fax/scanners configuration to develop a deployment strategy to reduce the number of devices by relying more on multi-function devices to reduce cost. [Target]
   - Continue to track the *potential* cost effectiveness of implementing virtualized desktops which could potentially require less support, less power and allow users to work anywhere on SInet with access to their files. Currently the low cost of PCs make this an unattractive option. [Target]
   - Implement electronic forms leveraging existing investment in Sharepoint. [Target]

2) Implement additional analytical tools to better measure and interpret system performance.

   - Implement analysis tools for storage and backup capacity usage. [Target]
   - Implement backup system analysis tools to problem solve and predict when we may run out of capacity. [Target]

3) Develop and implement a methodology for projecting future digital asset storage and backup requirements to create sustainable, optimal storage architecture. [Target]

IT Security Balanced Against Mission Needs

GOAL: IT security balanced against mission needs

Broaden the scope of the Smithsonian's IT security program in support of a more balanced enterprise program to enable a secure and safe IT environment for both our staff and virtual visitors

Objectives during this planning period

1) Continue to strengthen internal security controls for balanced increased access while minimizing the associated IT security risks.
   - Reduce IT security risks through increased understanding and reliance on internal IT security controls. [Funded]
   - Deploy security controls to mitigate risk introduced by new technologies such as with the deployment of VMware for server virtualization. [Target]
   - Replace older firewalls to meet increased Web traffic driven by increased usage of video. [Target]
   - Follow Smithsonian best-practice baseline builds. [Funded]
2) Strive to meet new security requirements.
   - Deploy full disk encryption on laptops when they are issued if the intent is to access or store sensitive information on the laptop. [Target]
   - Implement United States Government Configuration Baseline (USGCB) with the roll out of Windows 7 on desktop computers. [Funded]
   - Implement an annual review for the evaluation and audit of existing security controls per NIST 800-53. [Funded]
   - Maintain compliance with the Federal Information Security Management Act (FISMA) as a "best practice." [Funded]
   - Maintain compliance with Payment Card Industry (PCI) requirements. [Funded]
   - Implement two-factor authentication for all remote access accounts to SInet. [Funded]

H. Planning Process

Assumptions & Constraints

Information technology planning decisions are influenced by the strategic vision and goals for the Institution, as well as by program, social, political, economic, demographic, and technology issues. The following assumptions and constraints are of note.

- **Program**
  - Resources will be focused on initiatives that support the Institution's goals.
  - The public will increase its demand for visitor information and for access to collections, exhibitions, and research data in a participatory manner.
  - The Smithsonian will produce digital assets at a greater rate that will need to be managed and accessed via interoperable systems.
  - The Smithsonian will be required to provide to the public increased transparency into its operations and processes via the Internet.
  - Increasingly enterprise-level systems will need to enable the remix of digital assets to produce excellent museum exhibits and educational programs, provide access to research, and develop innovative ways to diffuse knowledge.
  - Systems will need to be developed in such a way that they can electronically interpret document rights, restrictions, and security requirements of digital assets before providing access to the digital assets
  - Will increasingly adopt the development and operation of a platform and shared-services model – including partnering with other Smithsonian units to create centers of excellence for Smithsonian-wide IT implementations that do not necessarily have to reside in OCIO.
- **Economic**
  - Funds available during the planning period for IT initiatives will be far less than the demand for them; and we must engage non-Federal funding sources to meet these emerging needs.
  - Recruiting and retaining a highly skilled workforce who can address emerging IT customer needs will be a continuing challenge.

- **Technology**
  - Required information technology skills, knowledge, and abilities will increasingly transition to more complex, online, interactive, web-based systems.
  - New technology will continue to evolve and enable users to have faster access to more timely data, which will trigger demands for new uses of IT to help manage programs and provide new services.
  - Commercial software and open source products can satisfy most Smithsonian application needs—the exception being research computing where locally developed applications for data reduction, modeling, and analysis will continue to be needed.
  - As the Institution engages globally on a grander scale, technology can provide multilingual tools to facilitate the cultural exchange and the ability of people to preserve, extend, and represent their own cultures.
  - Access to Smithsonian information using mobile technology will continue to increase.
  - Network bandwidth demands will continue to increase.

IT Capital Planning & Investment Control

To improve Institutional planning, budgeting, and performance management, the Smithsonian has integrated IT planning with overall planning and budget formulation activities. In support of these efforts, the Office of the Chief Information Officer (OCIO) has initiated a year-round perspective on IT planning and budget formulation through the use of tools such as IT strategy and in-process reviews that:

- Support the goals and objectives of the program areas;
- Integrate requirements across the Smithsonian;
- Increase user involvement;
- Link IT planning to overall Institutional processes.

IT plans and budgets are linked to the strategy, goals, and objectives for the Institution. Progress in executing the strategy is evaluated with program area performance measures to: (1) develop plans that reflect resources available to accomplish missions and goals; and, (2) provide measurable indicators of results. Units must work closely with IT support staff to identify and prioritize projects.

The Smithsonian has implemented the following four-stage iterative approach for information technology planning, budgeting, and performance management.

1. **Plan**—define Institutional and program area IT strategies, the framework of the planning process.

2. **Select**—Capital Planning Board selects IT projects for inclusion in the investment portfolio.

3. **Control**—the Technical Review Board monitors interim results of IT projects and takes action as necessary to ensure achievement of benefits through the life cycle management process.

4. **Evaluate**—assess results of each major IT project by conducting post-implementation reviews to determine whether the system delivered what was expected.

Planning. In February, the Chief Information Officer (CIO) typically reviews the Institution's IT strategies and outlined goals, initiatives, and activities for achieving Smithsonian commitments. The CIO works closely with the Chief Financial Officer (CFO) to implement an Institution-wide IT planning process that supports strategic objectives, integrates requirements across the organization, and ties closely to the budget formulation process. The Director of the Office of Planning, Management & Budget (OPMB), who reports to the CFO, issues planning guidance for the budget formulation process including specific information related to IT initiatives. In the spring, the Capital Planning Board meets to discuss priorities for IT investments and the portfolio of IT projects presented by the CIO to be considered in the upcoming Federal budget request.

The IT budget requests are subsequently mapped against the Regents' priorities for the Institution.

Selecting. The Capital Planning Board meets to review the proposed IT initiatives, prioritize them for inclusion in the budget request to the Office of Management and Budget (OMB).

Controlling. The Smithsonian has established formal mechanisms through the automated information system (AIS) and IT infrastructure life cycle management (LCM) process to monitor interim results of IT projects and take corrective action when needed. These mechanisms provide visibility into IT projects and establish management control points for assessing project cost, schedule, and quality.

Key projects, identified during the LCM tailoring process with OCIO, are selected for additional oversight by the Smithsonian's Technical Review Board (TRB) to ensure that they are progressing on schedule, within budget and satisfying stated requirements. These reviews assess projects with an eye toward:

- Improving the quality of intermediate work products, correcting defects as early in the life cycle as possible, and preventing long-term problems.
- Ensuring that the IT system being produced can be supported by the current and planned IT infrastructure.
- Ensuring that the projects conform to system development methodology and supporting tools, standard data, and adhere to the Institution's Technical Reference Model (TRM).
- Monitoring the impact of a project on other systems, related projects, and the enterprise architecture.
- Optimizing IT security, by conforming to the Smithsonian's IT security architecture and standards, and ensuring that IT security controls and risks are understood prior to moving to a production environment.

These reviews contain specifics on system development life cycle (SDLC) tasks such as design, development, training, testing, telecommunications, facilities, implementation, disaster recovery support, and other activities affecting the transition of projects from initiation through system operation. They also identify IT security architecture / standards for IT security requirements, IT security artifacts and deliverables required for systems to obtain accreditation and an Authority to Operate (ATO) in the Smithsonian's production environment.

The CIO also conducts in-process reviews of cost, schedule, and deliverables for key IT projects, and ensures that information regarding these projects is posted to the Federal IT Dashboard. The project management control system tracks schedules and performance against project plans in order to help managers identify problem areas and take corrective actions when actual results deviate significantly from plans.

Evaluating. The SDLC management process at the Institution requires that performance measures be identified for key projects during the concept phase of the life cycle and that post-implementation reviews be conducted during the operational phase to determine whether the system delivered what was expected.

IT performance measures fall into two categories: program-area-related measures are considered when making investment decisions; measures associated with operational performance of the system or infrastructure component are identified for the production environment. The operational performance measures become service standards that are incorporated into service-level agreements, operational support plans, or the customer service handbook.

Security Control

The Smithsonian is required to report, via OMB-300, how the major IT investment complies with federal security and privacy requirements. In making funding decisions, OMB assesses how well security/privacy details of the investment are documented and budgeted for the proposed investment life cycle. Starting in FY 2010, the Smithsonian is planning to increase visibility by ensuring the Capital Planning Board (CPB) requires systems budgets to more clearly identify support for IT Security and Privacy Controls. IT security/privacy costs are expected to include:

- Design and implementation of required management, operational, and technical security controls based on NIST SP 800-53;
- Creating and updating system certification and accreditation (C&A) artifacts and documents;
- Independent security assessment reports (SAR);
- Plans of actions and milestones (POA&Ms);
- Contingency / disaster recovery planning and testing;
- Continuous monitoring controls (e.g. Security log file reviews, account management, incident reporting, etc.).

Security costs may also include the products, procedures, and personnel (Federal employees and contractors) to support IT security controls (e.g., support for the system configuration management /change control process, personnel security, user account management, privacy safeguards, etc.). New unit and OCIO IT investments must initially identify adequate IT security/ privacy costs in their system acquisition plans.

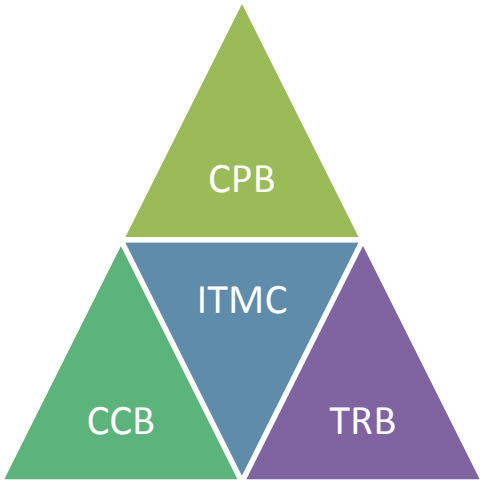
CPIC Stakeholders

IT policy at the Smithsonian centralizes program-related IT planning, technical direction, oversight, policy formulation, acquisition, and day-to-day operational management of the Smithsonian Institution network and portions of the IT infrastructure in the Office of the Chief Information Officer. Some individual Smithsonian units develop and operate specialized automated information systems, and provide desktop support services.

- The **Chief Information Officer** assists the Secretary and Under Secretaries in modernizing the Institution's information systems and sets the strategic vision for leveraging IT to help achieve Smithsonian goals and objectives. The CIO directs the:
    - Development, implementation, maintenance, enhancement, and operation of selected automated information systems;
    - Development of strategic and operational information technology plans and operating budgets;
    - Architectural design and acquisition of supporting automated information systems and the underlying IT infrastructure;
    - Operation of the Institution's central computer facilities, equipment, and voice and data networks;
    - Development of the enterprise architecture and IT standards;
    - Development of the IT security enterprise program.
- The **Chief Financial Officer** assists the Secretary and Under Secretaries by providing oversight of the activities of the Office of Planning, Management & Budget, the Office of the Comptroller, the Office of Contracting, and the Treasurer of the Institution.

IT Committees & Boards

In support of the IT planning efforts, Institution-wide committees and boards involved in IT planning and oversight include:



IT Planning & Oversight Committees

- The **Capital Planning Board (CPB)** provides strategic direction and sets priorities for all capital programs—including all major information technology projects.

- The **Information Technology Management Committee (ITMC)** advises and assists the Chief Information Officer (CIO) in establishing and implementing IT management policies, procedures, practices, and enterprise architecture, as well as standards governing the IT infrastructure and IT security—including the acquisition, development, maintenance, and operation of the Smithsonian's automated information systems.

- The **Technical Review Board (TRB)** evaluates the progress of each major IT project and assesses the quality of project deliverables. Its primary objectives are to: (1) improve the overall level of project success, system quality, and productivity; (2) ensure that risks are managed at an acceptable level by completing assessments and IT Security artifacts and deliverables at key project milestones.

- The **Change Control Board (CCB)** reviews requests for hardware and software changes to the IT infrastructure. In considering the potential impact of proposed changes on production schedules, the CCB verifies that users will receive appropriate notification, suggests changes in timing to reduce disruption in work or conflicts in schedules, and denies requests that may have negative effects on day-to-day IT operations or justified increases in IT security risks.

This Institutional perspective allows new technology to be introduced and fosters consistency throughout the Smithsonian by standardizing hardware, software, data, and IT security.

Consistency will be implemented to the extent required to balance the benefits of reduced IT costs and enhanced technical capability associated with a homogeneous IT infrastructure, against the heterogeneity required to meet unique objectives and ensure responsive support. The framework also provides the flexibility needed to encourage innovation, while ensuring that new capabilities can be expanded easily beyond a developer's desktop and supported by the IT infrastructure.

Program Area Leadership

Individual program areas define what needs to be done in terms of IT support functions and their performance goals. Working with a program area sponsor, the CIO identifies how IT can be applied to help achieve desired results, while maintaining efficient and effective IT operations throughout the Institution. The program area sponsor and the CIO also work together to determine project costs and schedules, and to prioritize IT projects and support. The successful development, deployment, and operation of IT systems require close collaboration and partnership between the CIO and IT program area sponsors.

- The **Secretary of the Smithsonian** determines policies, directs the programs of the Institution, and is responsible for all of its activities. The Secretary is responsible for approving all IT strategies and initiatives, although he may delegate approval authority to the Capital Planning Board.

- The **Under Secretary for Finance and Administration** is responsible for the activities of the Institution-wide support functions including the Office of the Chief Information Officer, Office of the Chief Financial Officer, Office of Facilities Engineering and Operations, Office of Human Resources.

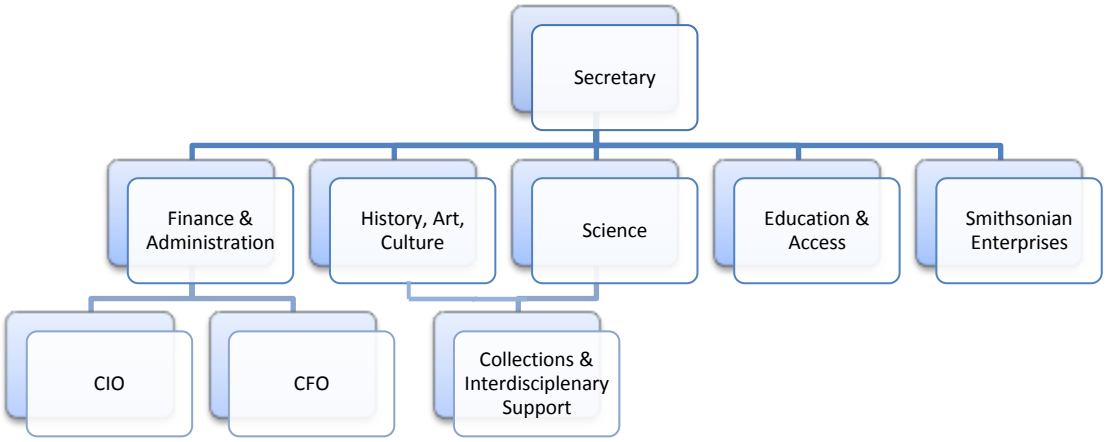
- The **Under Secretary for Science** is responsible for the activities of the Institution's scientific research and museum units; consortia on Unlocking the Mysteries of the Universe, and Understanding and Sustaining a Biodiverse Planet.

- The **Under Secretary for History, Art and Culture** is responsible for the activities of the Institution's history, art, and cultural museums, research, public programming and outreach activities; consortia on Valuing World Cultures, and Understanding the American Experience.

- The **Assistant Secretary for Education and Access** is responsible for defining the Institution's education program, and assessment strategies--including overseeing the National Science Resources Center, the Smithsonian Center for Education and Museum Studies, and coordinating the efforts of the Institution's 32 education-based offices; national programs that focus on traveling exhibitions, and affiliations with museums across the country; and the Smithsonian Associates' programs of lectures, performances, and classes that physically extends the Institution beyond the National Mall.

- The **Chief Executive Officer, Smithsonian Enterprises** is responsible for the revenue-generating operations of the Institution. These include restaurants, museum shops, mail order, travel tours, product licensing, and the magazine.

- The **Deputy Under Secretary for Collections & Interdisciplinary Support** is responsible for collections and interdisciplinary support-related policies, programs and activities, including the National Collections Program, the Smithsonian Institution Libraries, the Smithsonian Institution Archives, and Scholarly Press; and the coordination of collections-related digitization priorities across the Institution in concert with the Office of the Chief Information Officer.



Placement of CIO, CFO & Program Area Leadership

I. Transition Framework

The Office of Management and Budget sponsors and/or endorses cross-agency initiatives in one place for easy reference, review, and assessment relative to their applicability to individual agencies. As a trust instrumentality of the United States, the Smithsonian is not a part of any branch of the federal government. Even so, the Board of Regents recommends that the Institution follow federal best practices when these practices align with the best interests of the Smithsonian and its responsibilities to carry out the mission for which the Smithsonian was founded. In this light, e-government and line of business initiatives are evaluated and considered as components of the Smithsonian's enterprise information technology architecture.

Often the Smithsonian is limited in its participation in that many of these initiatives do not fit the unique requirements of the Smithsonian as a wholly-owned Trust instrumentality of the United States of America and a registered 501(c)(3) non-profit organization, whose mission is for the increase and diffusion of knowledge, versus the traditional government role of providing a defined statutory service to the citizens. In particular the composition of its staff being made up of federal employees, trust employees, and a significant number of volunteers and visiting scholars would result in federal solutions requiring significant customization at increased costs. Funding of Smithsonian efforts extend beyond federal appropriated dollars to include trust revenue, grants, donations, and partnerships, which is not typical of most Federal agencies, adds to the complexity.

E-Government Initiatives

The Smithsonian Institution, as a Trust Instrumentality of the United States, is not subject to the E-Government Act. As stewards of the Trust, Smithsonian management has committed to evaluating each E-Government Initiative and adopting them where it is both feasible and beneficial to the mission of the Institution. In many cases, the initiatives put forth under the E-Government umbrella simply do not apply to or effectively support the mission of the Smithsonian. The level of participation in each initiative is further defined in the Smithsonian's Information Technology Plan.

Smithsonian Participation in E-Government Initiatives

Government to Business	Government to Citizen
• Federal Asset Sales	• Recreation One Stop • USA Spending • Recovery.Gov • Recruitment One-Stop (minimal) • Geospatial One-Stop (minimal)
Government to Government	**E-Authentication**
• E-Vital (minimal)	• HSPD-12 (minimal)
Internal Efficiency & Effectiveness	
• E-Clearance • E-Learning • E-Payroll • E-Training (minimal)	• E-Travel • Enterprise HR Integration • Integrated Acquisition Environment

Federal Transition Framework Lines of Business

During the periodic evaluation of existing systems and the planning for new systems, the Federal Transition Framework (FTF) Line of Business initiatives are evaluated as alternatives for satisfying the functional requirements in the modernization and enhancement of the Smithsonian's enterprise architecture.

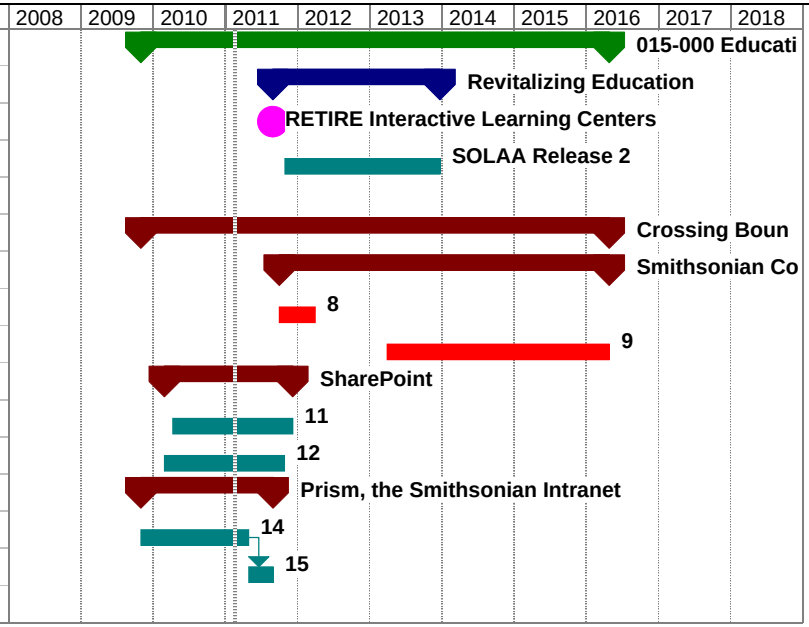
With thoughtful consideration, the Smithsonian has evaluated and continues to monitor the following lines of business: financial management, human resource management, geospatial, information system security, and IT infrastructure.

J. Transition and Sequencing Timeline

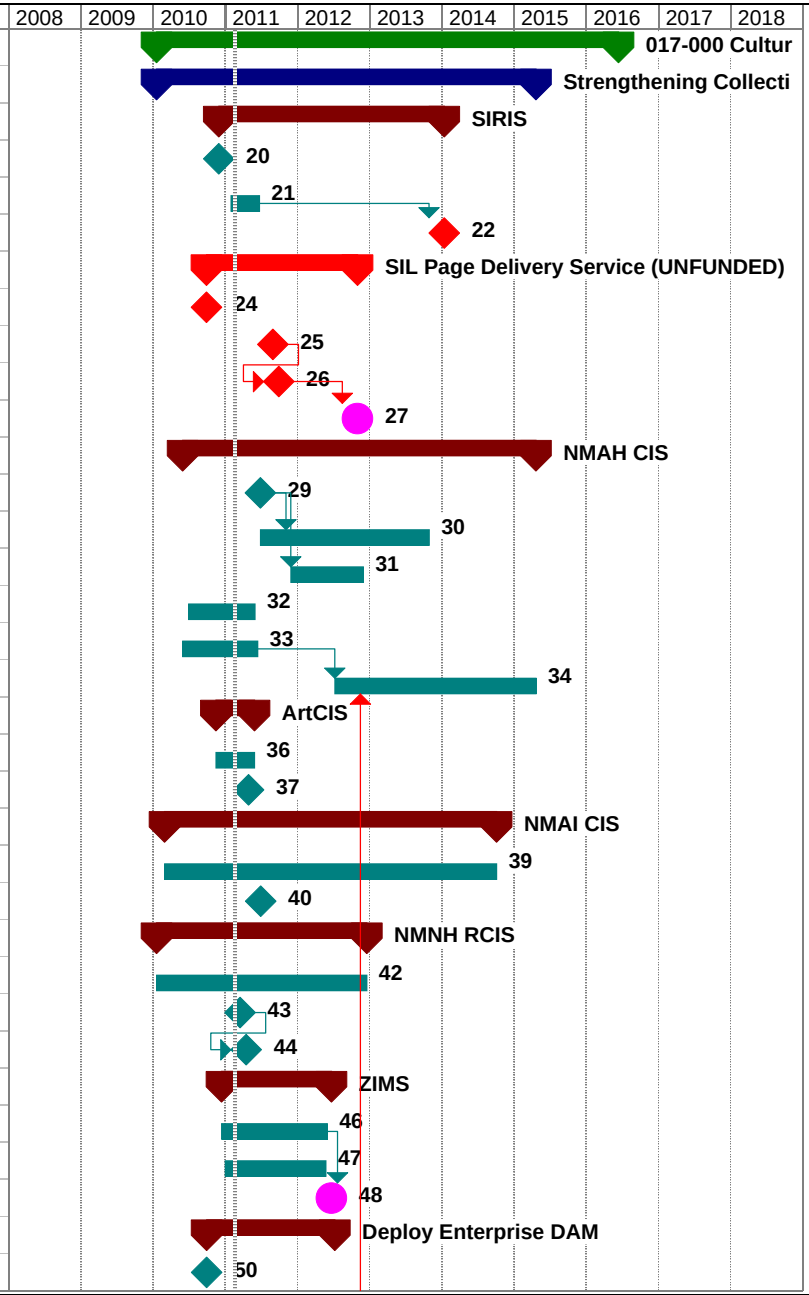
The following charts summarize key milestones for the planning period of the IT projects and systems detailed in the companion document to this strategic overview, *Smithsonian Information Technology Plan (SITP)*. Both documents may be found at: http://www.si.edu/ocio/

The milestones are organized by enterprise architecture (EA) segments, and link each of them to the Smithsonian's strategic IT initiatives taking into account any dependencies between them and across segments. Enterprise architecture segments are a subset of the entire enterprise architecture based on varying mission areas with the long term goal of implementing shared IT solutions that replace redundant systems with agile enterprise solutions which continuously adapt to meet emerging Institutional requirements. At the Smithsonian we have the following EA segments defined for the planning period. Each segment can have one or more of the Federal EA line of business codes.

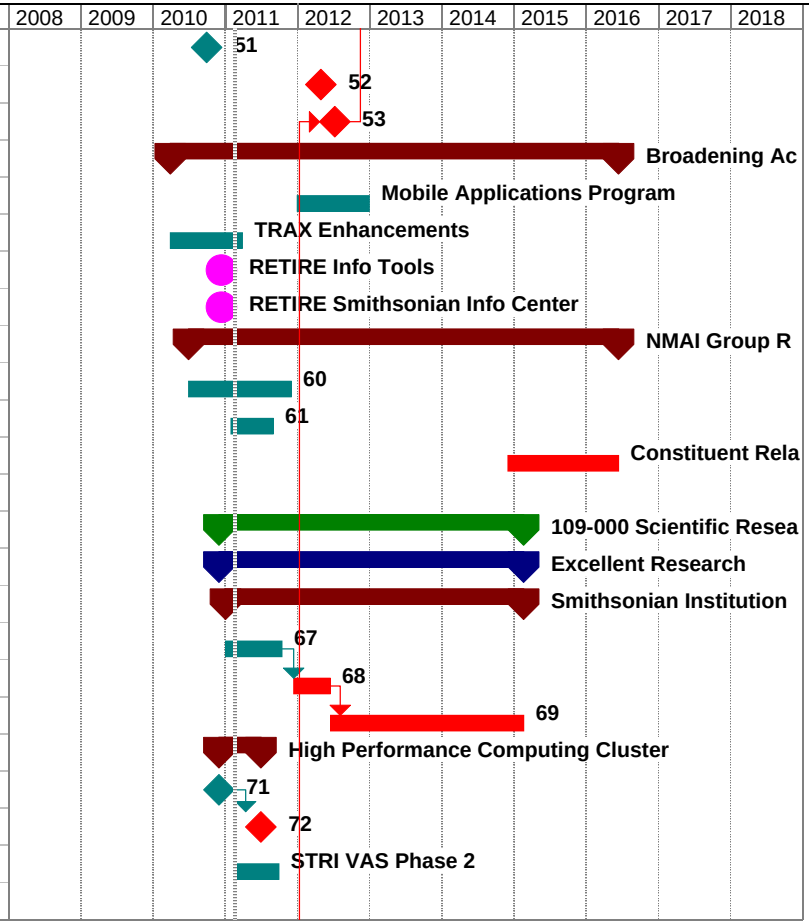
ID	Task Name
1	**015-000 Education Segment**
2	**Revitalizing Education**
3	**RETIRE Interactive Learning Centers**
4	**SOLAA Release 2**
5	
6	**Crossing Boundaries**
7	**Smithsonian Commons (UNFUNDED)**
8	Beta Release
9	Full Production System
10	**SharePoint**
11	Extranet Implementation
12	Enhanced Functionality (Dashboards, Mashups)
13	**Prism, the Smithsonian Intranet**
14	Phase 1
15	Phase 2
16	



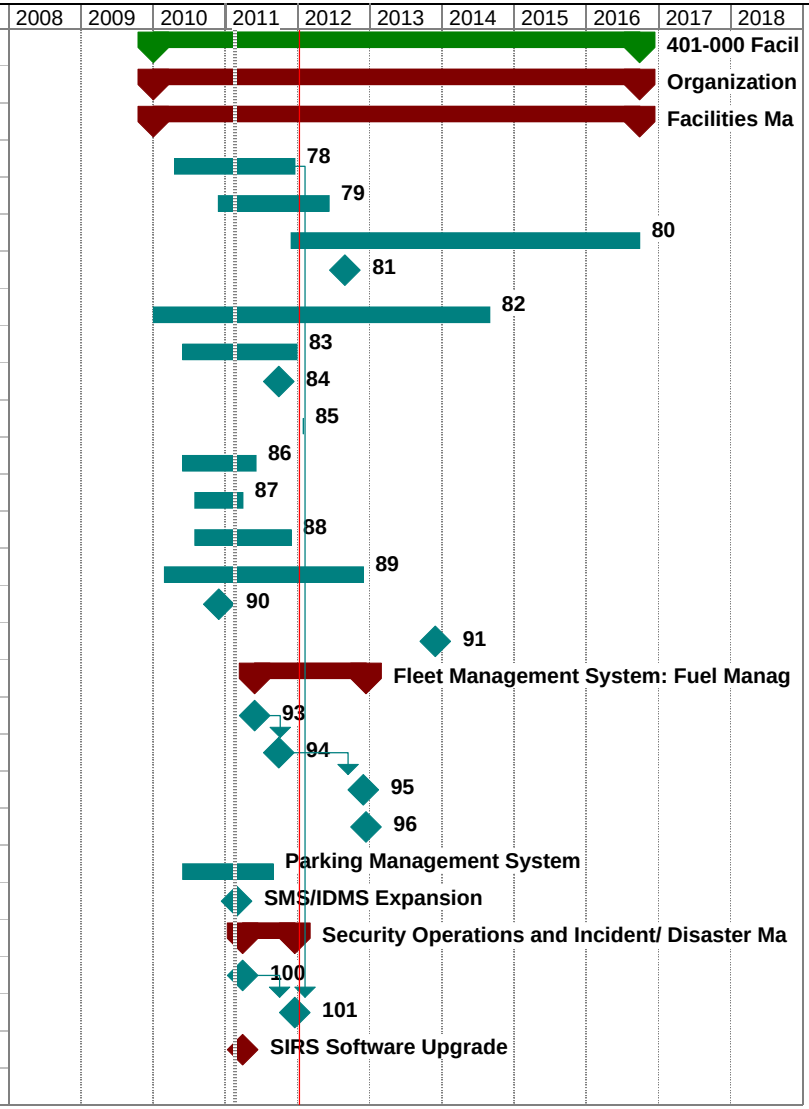
ID	Task Name
17	**017-000 Cultural, Artistic & Historic Preservation and Exhibition Segment**
18	**Strengthening Collections**
19	**SIRIS**
20	Interoperable with DAMS
21	Update to latest software release
22	Deploy SIRIS Replacement (TBD)
23	**SIL Page Delivery Service (UNFUNDED)**
24	Idenfy Architecture
25	Implement with existing digital volumes
26	Integrate into digital workflow
27	RETIRE Digital Library Program
28	**NMAH CIS**
29	Upgrade to version 1.5
30	Implement preservation requirements
31	Implement loan program
32	Publish 1000 records to the Web
33	Metadata Cleanup for Enterprise DAM, 2 TB
34	Migrate files to SI DAM
35	**ArtCIS**
36	Integrate into EDAN cross search
37	Upgrade to TMS 2010
38	**NMAI CIS**
39	Implement Standardized thesauri and classification terms
40	Implement use for archival processing
41	**NMNH RCIS**
42	Migrate Legacy Databases
43	Combine EMU and TMS
44	Retire TMS
45	**ZIMS**
46	ISIS deploys ZIMS Phase 1: basic animal records
47	Launch Keepers Reporting System
48	RETIRE Animal Keepers' Report
49	**Deploy Enterprise DAM**
50	Video Metadata Model



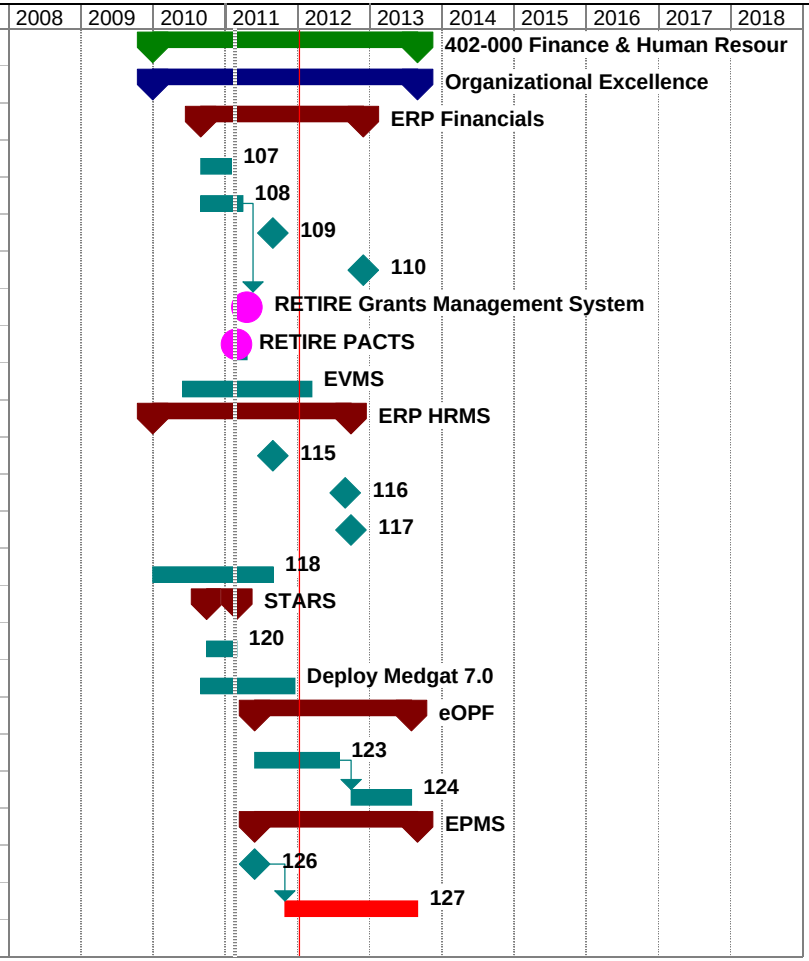
ID	Task Name
51	Audio Metadata Model
52	Artesia 7.x Upgrade (UNFUNDED)
53	Storage Expansion (UNFUNDED)
54	**Broadening Access**
55	**Mobile Applications Program**
56	**TRAX Enhancements**
57	**RETIRE Info Tools**
58	**RETIRE Smithsonian Info Center**
59	**NMAI Group Reservations & Event Management**
60	Phase 4: Enhance Functionality & User Base
61	Phase 5: Enhance Functionality & Availability of Data
62	**Constituent Relationship Management (UNFUNDED)**
63	
64	**109-000 Scientific Research Segment**
65	**Excellent Research**
66	**Smithsonian Institution DataNet**
67	Develop Pilot Repository
68	Develop Initial System and migrate initial datasets (UNFUNDED)
69	Migrate Additional Datasets (UNFUNDED)
70	**High Performance Computing Cluster**
71	Expand to 2100 total processors
72	Add additional 512 processors (UNFUNDED)
73	**STRI VAS Phase 2**
74	



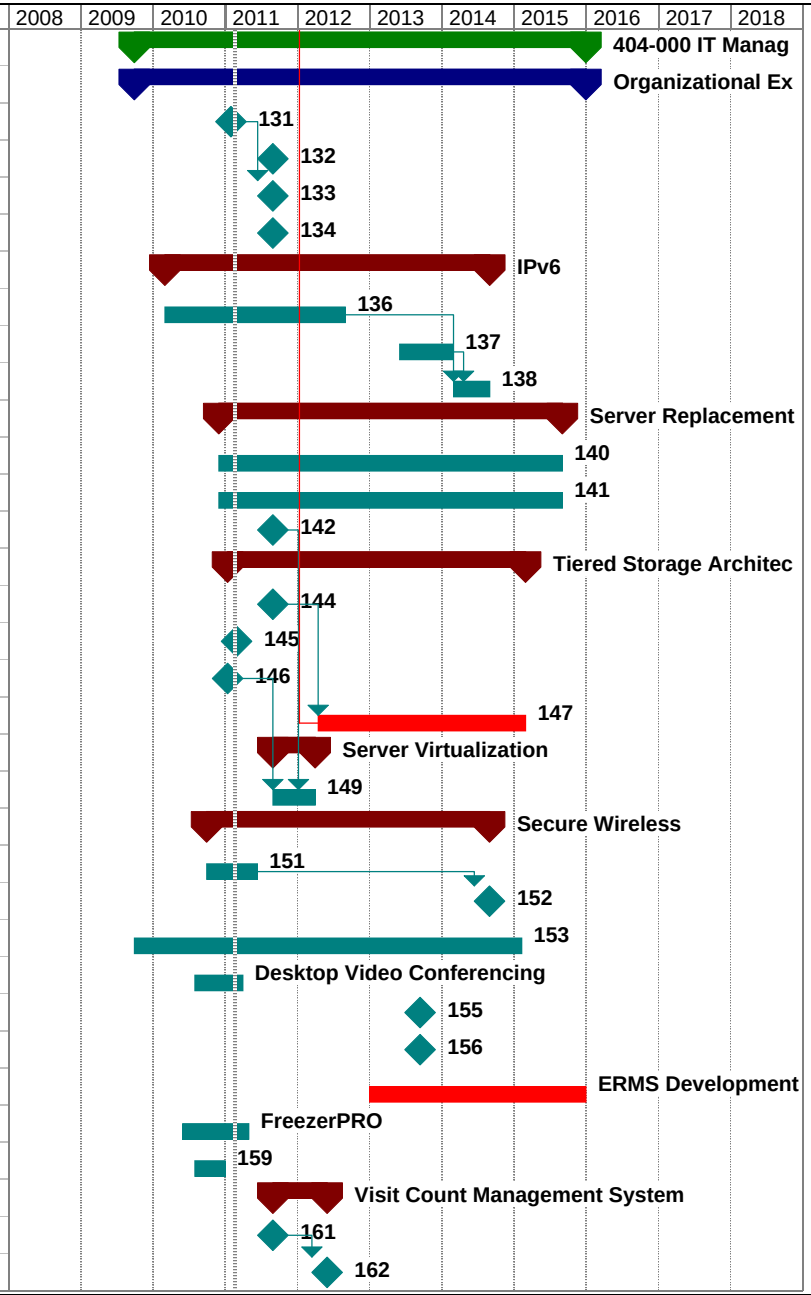
ID	Task Name
75	**401-000 Facilities and Security Segment**
76	**Organizational Excellence**
77	**Facilities Management System**
78	Implement Asset Management
79	Upgrade GIS and Integrate
80	Expand Integratations
81	Implement Projects
82	Implement Portfolio
83	Deploy Enterprise Reporting
84	Implement Data Warehousing
85	Implement Hazardeous Material Phase 2
86	Implement METR Inspection
87	Implement Hazardeous Conditions
88	Upgrade Hardware Platform
89	Implement Work Management
90	Implement Self-Service Request Module
91	Implement Move Management
92	**Fleet Management System: Fuel Management**
93	Phase III - Fleet Pool Reservation System
94	Phase IV- GPS Interface
95	Phase V - Mobile Technology
96	Facility Center Interface
97	**Parking Management System**
98	**SMS/IDMS Expansion**
99	**Security Operations and Incident/ Disaster Management Planning System**
100	Deploy DMPS
101	Integrate DMPS with FMS
102	**SIRS Software Upgrade**
103	



ID	Task Name
104	**402-000 Finance & Human Resources Segment**
105	**Organizational Excellence**
106	**ERP Financials**
107	Project Cost Accounting Module
108	Grants & Contracts Module
109	Cash Management Module
110	Implement Treasury Account Symbol Reporting
111	**RETIRE Grants Management System**
112	**RETIRE PACTS**
113	**EVMS**
114	**ERP HRMS**
115	Employee Self Service: Training Records
116	Single Sign-On
117	Trust Self Service for Benefits
118	Additional system interfaces
119	**STARS**
120	Migrate to Enterprise Hiring Manager
121	**Deploy Medgat 7.0**
122	**eOPF**
123	Implement eOPF
124	Load back files
125	**EPMS**
126	Migrate to Halogen Release 1
127	Phase 2, SI-wide (UNFUNDED)
128	



ID	Task Name
129	**404-000 IT Management & Planning Segment**
130	**Organizational Excellence**
131	**Network router & switch upgrades @ STRI**
132	**VoIP**
133	STRI
134	SERC
135	**IPv6**
136	Server Transition
137	Workstation Transition
138	Fully functional IPv6 Environment
139	**Server Replacement Program**
140	Replace oldest servers
141	Retire/Consolidate oldest servers
142	**10GB Ops Pilot in HDC**
143	**Tiered Storage Architecture**
144	Implement Capacity Planning Tool
145	Implement Enterprise Email Archiving Solutions SI-wide
146	Storage Virtualization Architecture
147	Expand Storage & Backups for Digital Assets (UNFUNDED)
148	**Server Virtualization**
149	Phase 1
150	**Secure Wireless**
151	Phase 3: Port Level Authentication & Security Controls Enhancement
152	Phase 4: Vulnerability and Penetration Testing
153	**Periodic Hardware Replacement**
154	**Desktop Video Conferencing**
155	**Security**
156	Deploy IPS/IDS in SAO and SE environments
157	**ERMS Development (UNFUNDED)**
158	**FreezerPRO**
159	**NMAI Repartriation Case Management System**
160	**Visit Count Management System**
161	Upgrade
162	Enhancements



Smithsonian IT Transition & Sequencing Plan
FY 2011 - FY 2015

Information Technology Resources Summary

This table summarizes Federal IT resources at the Smithsonian for the previous budget year, as well as those anticipated for the current and FY 2012 budget years as submitted to the Office of Management & Budget (OMB) in the Exhibit 53.

LOB*		FY 2010	FY 2011	FY 2012
	TOTAL ($ in millions)	**64.20**	**68.46**	**66.57**
Part 1: IT Systems by Mission Area		**26.94**	**28.84**	**26.95**
Financial & Administrative Management		**14.37**	**14.66**	**14.30**
402	Enterprise Resource Planning System	11.47	11.65	11.59
401	Facilities Management System	1.07	1.33	1.07
106	Smithsonian On-Line Academic Appointment System	0.85	0.89	0.85
401	Security Management System	0.37	0.24	0.24
401	Other Administrative Management Systems	0.57	0.53	0.53
401	Fleet Management System and SIRS	0.04	0.02	0.02
Collections Management		**10.84**	**11.45**	**10.91**
106	Art Collections Information System (ArtCIS)	1.87	1.96	1.87
106	American Indian CIS (NMAI CIS)	0.91	0.93	0.91
106	American History CIS (NMAH CIS)	0.72	0.58	0.58
106	SI Research Information System (SIRIS)	0.64	0.66	0.64
106	CIS Pool	0.91	0.91	0.91
106	NMNH Research & Collections Information System (RCIS)	4.27	4.00	4.00
106	Zoological Information Management System (ZIMS)	0.14	0.08	0.12
106	TRAX	0.11	0.07	0.08
106	Enterprise Digital Asset Net (EDAN), inc. DAMS	0.80	1.34	1.08
106	Digitization Program Office	0.47	0.92	0.72
Scientific Research		**1.71**	**2.71**	**1.72**
109	SAO Scientific Computing	1.44	1.44	1.35
109	Scientific Application Software	0.27	0.27	0.37
198	Encyclopedia of Life	0.00	1.00	0.00
E-Gov Initiatives		**0.02**	**0.02**	**0.02**
403	E-Learning System	0.02	0.02	0.02
Part 2: IT Infrastructure & Office Automation		**36.71**	**39.06**	**39.07**
404	Managed IT Infrastructure	36.09	38.33	38.38
404	IRM Pool	0.40	0.40	0.40
404	Web and New Media Initiative	0.22	0.33	0.29
Part 3: Enterprise Architecture & Planning		**0.55**	**0.56**	**0.55**
404	IT Architecture & Planning	0.55	0.56	0.55

* Federal Enterprise Architecture Line of Business Code