National Aeronautics and Space Administration

Making IT Stellar at NASA

Office of the Chief Information Officer

NASA IT Vision: *The NASA IT Organization is the* ***very best*** *in government*

Linda Y. Cureton, NASA CIO

Opening Thoughts

Today we are launching a bold and ambitious new space initiative to enable us to explore new worlds, develop more innovative technologies, foster new industries, increase our understanding of the earth, expand our presence in the solar system, and inspire the next-generation of explorers…

NASA Administrator Charles Bolden
February 1, 2010

Agenda

- The Mission of NASA IT
- The Vision of NASA IT
- NASA's IT Environment
- NASA IT Strategic Themes
- Infrastructure Strategy
- The Future

Stellar IT Supporting NASA Missions

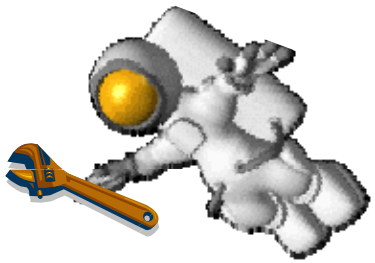
NASA IT Mission

- The mission of the NASA IT organization is to increase the productivity of scientists, engineers, and mission support personnel by responsively and efficiently delivering reliable, innovative and secure IT services.

NASA IT Vision

NASA IT Vision:

- By advancing NASA's space and research program results through secure, efficient, innovative, reliable, and responsive services that are valued by stakeholders, the NASA IT organization is one of the most highly regarded Federal IT organizations, a sought-after innovator, and respected partner for NASA's mission and mission support organizations.



NASA's IT Environment

Users
- 18,000 Employees
- 44,000 Contractors

IT Spending
- $1.8 B annually

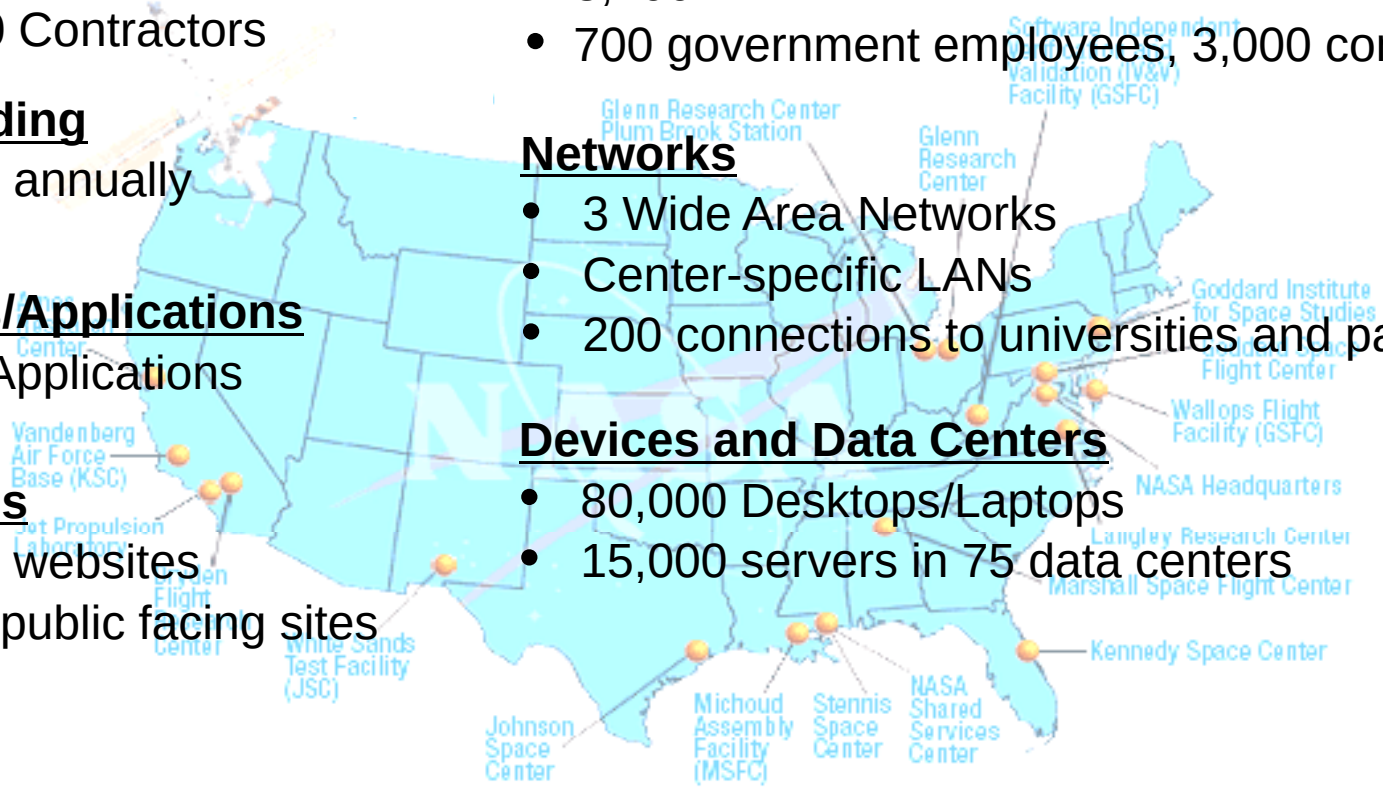
Systems/Applications
- 4,500 Applications

Websites
- 8,000 websites
- 2,000 public facing sites

NASA IT Workforce
- 3,700 IT FTE
- 700 government employees, 3,000 contractors

Networks
- 3 Wide Area Networks
- Center-specific LANs
- 200 connections to universities and partners

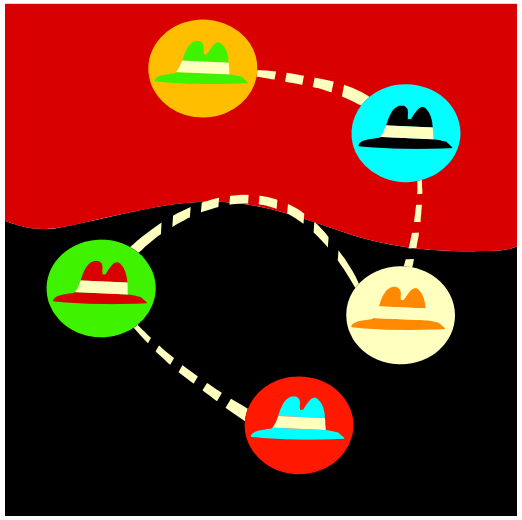
Devices and Data Centers
- 80,000 Desktops/Laptops
- 15,000 servers in 75 data centers



* As of July 2008

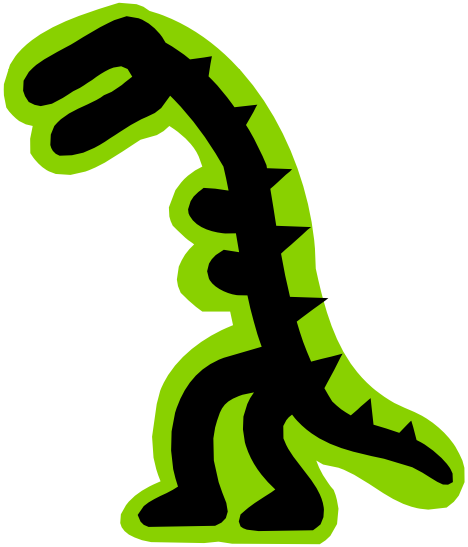
Strategic Themes

- Role of the CIO and the IT Organization
- Enterprise Architecture and Technology Planning
- Secure Environment
- Governance and Stewardship
- Implementation



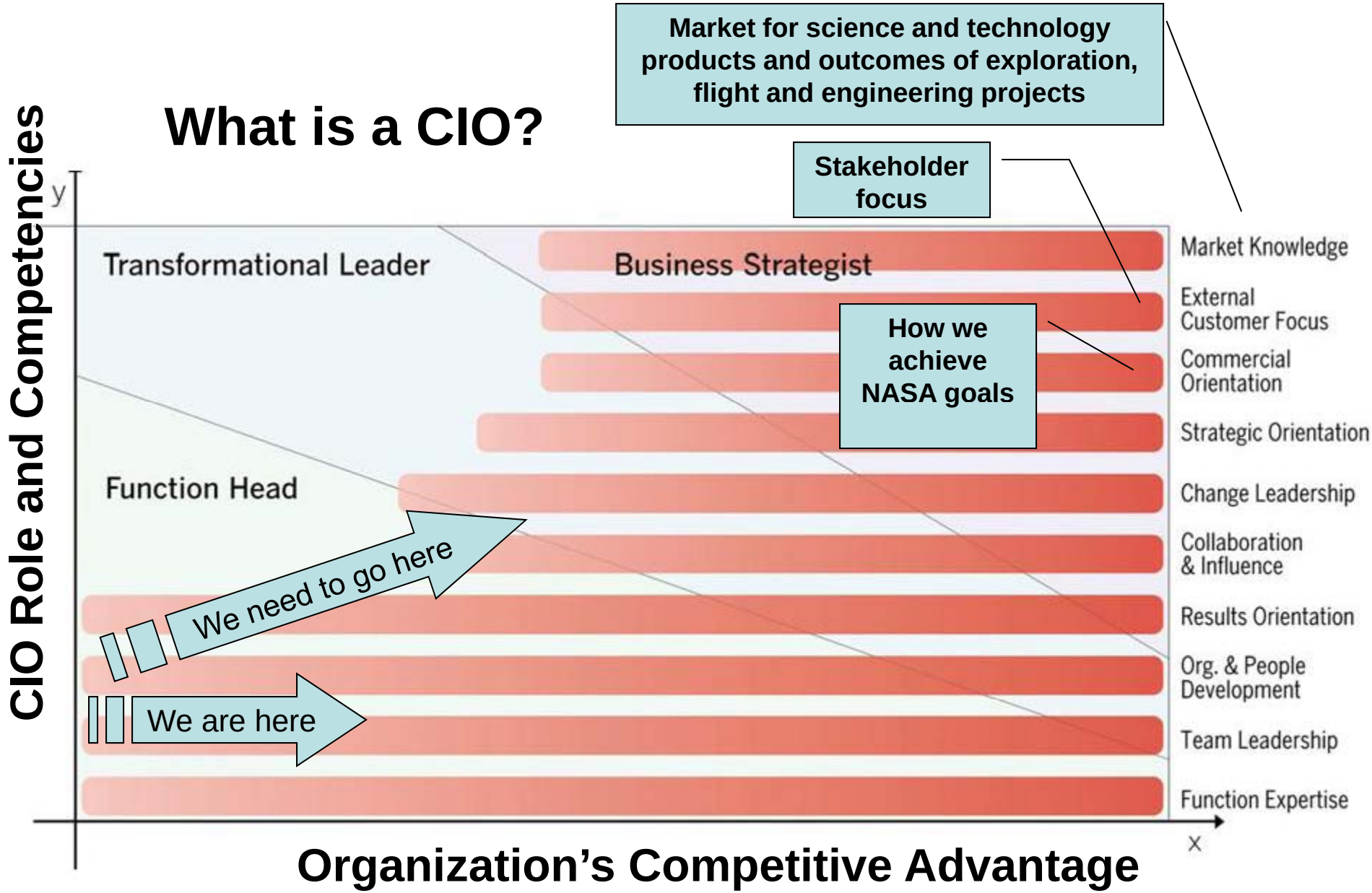
Role of the CIO

- Role of the IT organization
- Role of the CIO
- What is IT anyway?



"Agency executives know that CIOs provide a vital resource to organizations—they just don't know what it is," *– Dan Matthews, former CIO Department of Transportation and current Lockheed Martin executive*

What is a CIO?



Future-State CIO Competencies Report, www.cio.com.

Role of the CIO

- Supply side
  - » I3P
  - » Service delivery
  - » Service management
  - » Customer fulfillment
  - » Cost
- Demand side
  - » Strategy and vision
  - » Architecture
  - » Mission/business alignment of IT
  - » Governance
  - » Value

"Two paths lie ahead of today's CIOs. One … trusted senior executive leader … the other … technology management (that) just keep(s) the lights on and does it cheap." – The New CIO Leader (Broadbent and Kitzis)

Leverage Innovation

- Innovation
  - » We can learn a lot about innovation by looking at lessons taught to us by the tiny mustard seed.
  - » Tiny seed blossoms into a large sprawling plant and has many uses.
  - » Small amounts of innovation can blossom into extensive capabilities that can give your organization the ability to adapt, grow, and thrive.

"Innovation distinguishes between a leader and a follower." - Steve Jobs

Planning Competency

- Project planning
- ITIL Framework
  - » Problem and incident management
  - » Configuration management
  - » Change management
- Deliver results

A vision without a plan is a hallucination

Securing the Environment

- Risk Based Priorities
- Threat analysis
- Alcatraz approach untenable

IT Governance

- Poor IT governance at the root of many problems
- Implementing a Federated governance process
- How we make decisions
- Who makes decisions
- Desired outcomes are achieved

Implementation

- Apply the discipline that is NASA's heritage
- Strengthen our performance as a team for perfect execution
- Sourcing service delivery through an integrated set of contracts

Information Technology (IT) Infrastructure Integration Program (I^3P) Acquisitions

- Providing desktop, data center, Enterprise application, Web and network services through an integrated set of contracts
- Web Enterprise Service Technologies (WEST) contract (final request for proposal, or RFP, issued Dec. 4, 2009)
- NASA Integrated Communications Services (NICS) contract (final RFP issued Dec. 11, 2009)
- Enterprise Applications Service Technologies (EAST) contract (final RFP issued Jan. 6, 2010, Awarded October 2010)
- Agency Consolidated End-user Services (ACES) contract (final RFP issued Jan. 25, 2010)
- NASA Enterprise Data Center (NEDC) contract (final on hold)

Infrastructure Strategy

- End User Services
  - » Flexible
  - » Managed diversity
  - » Economies of scale
  - » Improved security through good management practices
- Network Strategy
  - » Reduce complexity of LAN environment
  - » Strengthen intrusion detection
  - » Improved security

Infrastructure Strategy

- Application Environment
  - » Improved transparency of development costs
  - » Innovation
- Web Services
  - » NASA web sites
  - » Web applications
  - » Social Media
- Data Center Services
  - » Cloud Computing
  - » Data Center

Infrastructure Strategy

- Cloud Computing
  - » Flexible, scalable, elastic delivered through the Internet
  - » Commercial cloud
  - » Nebula
- Data Center
  - » Short term wins
    - Facility management
    - Power measurement
    - Virtualization
  - » Longer term
    - Consolidation
    - Leverage cloud

Moving Mountains with Innovation

- Be customer focused and relevant
- Be willing to take risks
- Have a plan