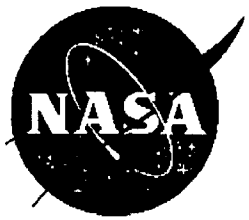
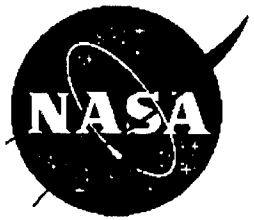


Australian IT Directors' Summit
2001

Next Space Race is in

IT

George Alger
NASA Ames Research Center

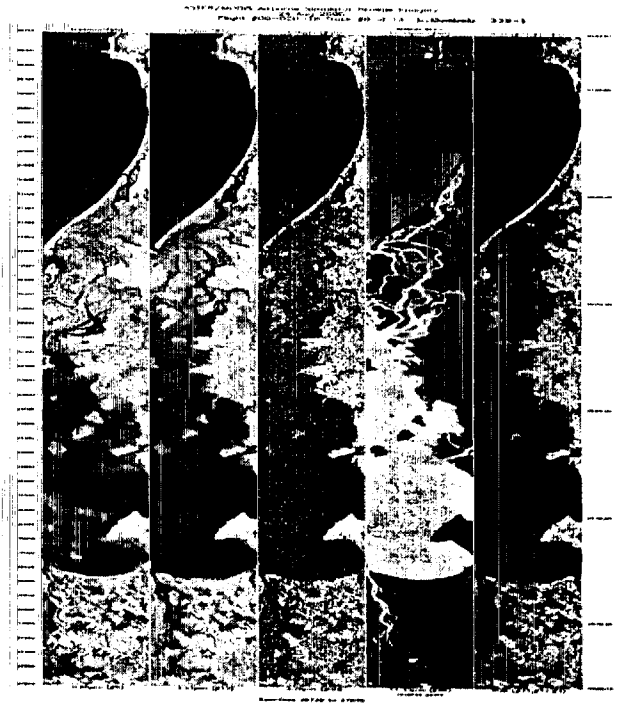


- GDP vs. Basic Necessities
- Effectiveness vs. Efficiencies
- ROI vs. Legacy Knowledge
- Knowledge Management

Australian IT Directors' Summit 2001

Ames Research Center

CAT Scan



Coombabah Lake

- NASA Science and Technology Applications

Global

- Internet Technology

Global

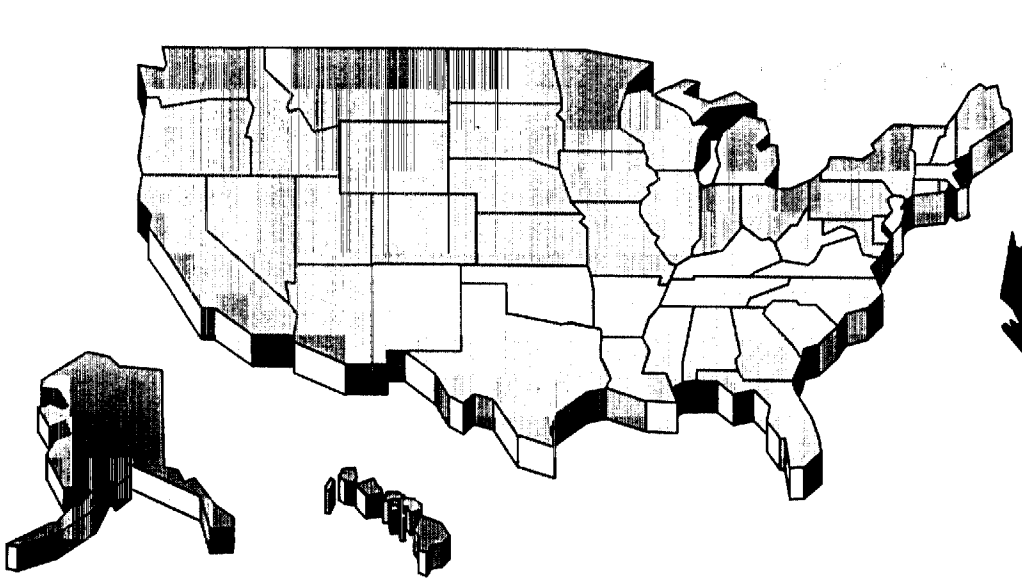
- International Financial Applications

Global

Australian IT Directors' Summit 2001

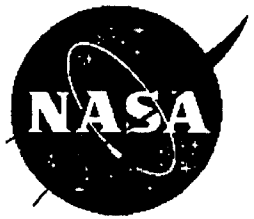
Ames Research Center

1999 Est. GDP



$9.23T
(2% Ag)

$416.2B
(3%Ag)



Australian IT Directors' Summit 2001

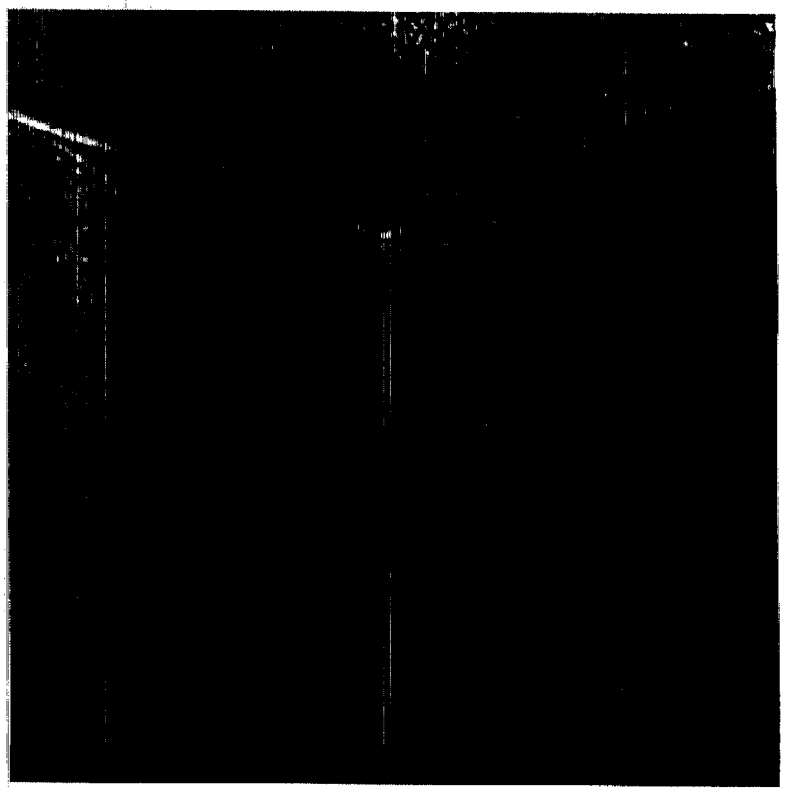
Ames Research Center

- Global Warming and an IT Economic Opportunity
  - NASA and the International Space Community have built proven hardware, systems and infrastructure to measure/monitor Global Climate Change.
  - NASA and the International Space Science Community are dedicated to keeping these systems state-of-the-art into the future.
- Strategic IT linkages for greater distribution and utilization of these global data sets could be the greatest IT economic opportunity ever.
- The Economics of "Green"

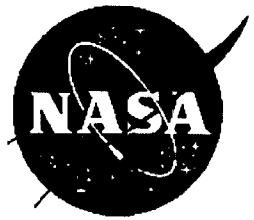
Australian IT Directors' Summit 2001

Ames Research Center

Flood Plain



Fire Damage

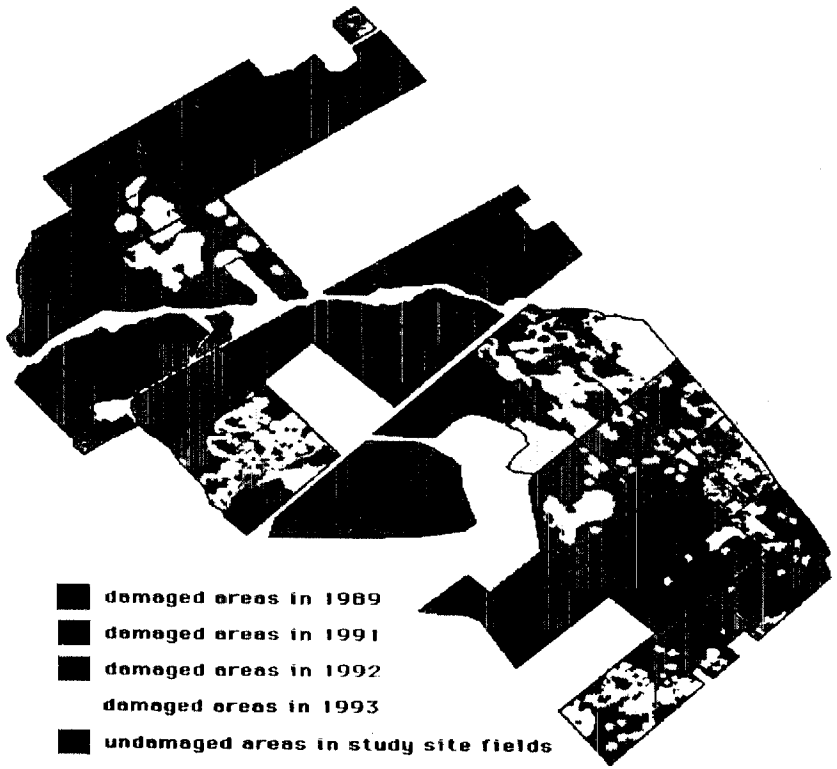


Australian IT Directors' Summit 2001

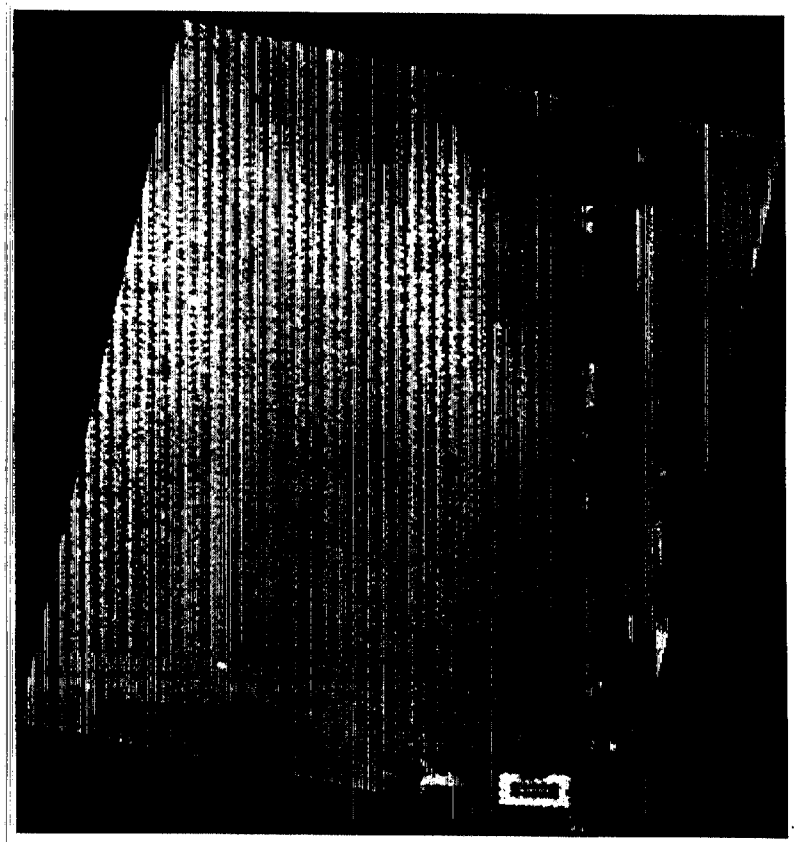
- Space Technology's Need for IT Strategic Thinking
- Strategic IT Implementation
- What will Space Technology look like in Five Years?
- What will ASPs look like in Five Years?

Australian IT Directors' Summit 2001

Ames Research Center



Phylloxera damaged areas in 1989, 1991, 1992, and 1993 demonstrating the rapid spread pattern for a Napa Valley GRAPES study site.



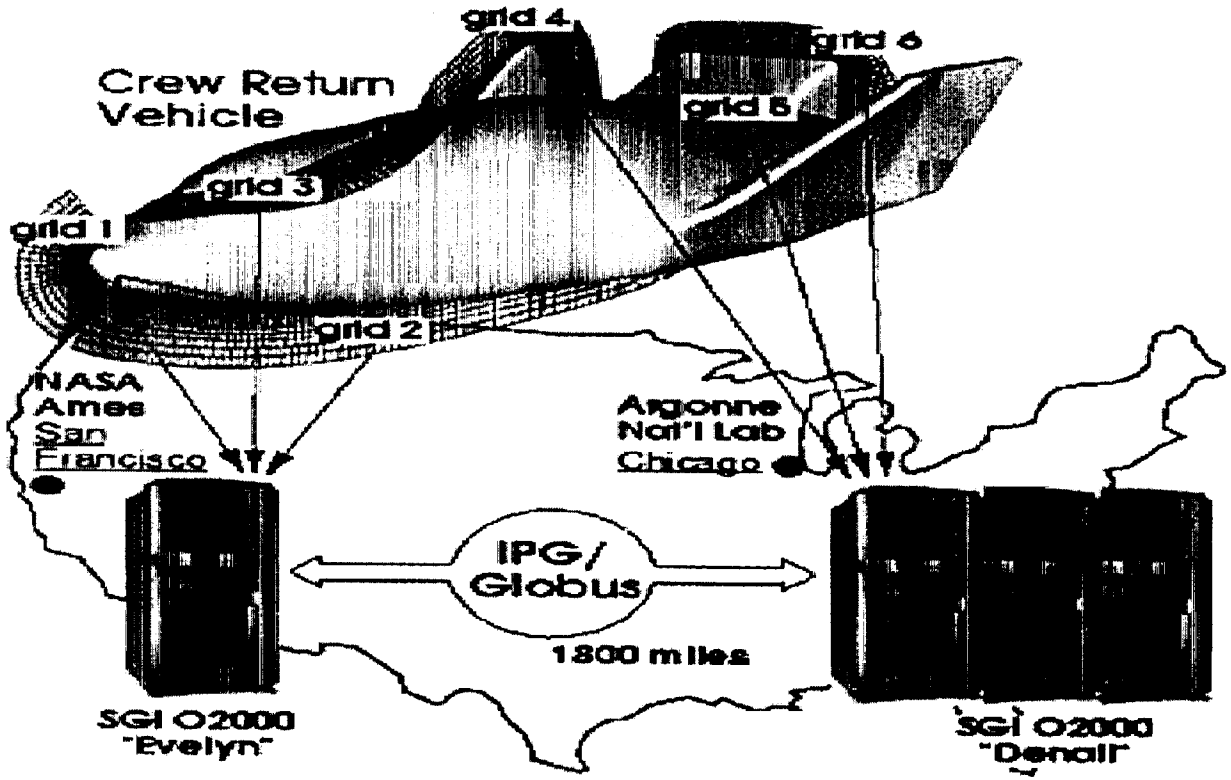
Napa Valley Grape Study

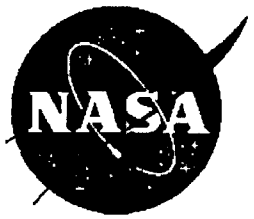
- NASA Models
  - Very small, localized, and encumbered by bureaucracy

- Models from International Space Community
  - CSIRO, ACRES, etc…

Australian IT Directors' Summit 2001

Ames Research Center





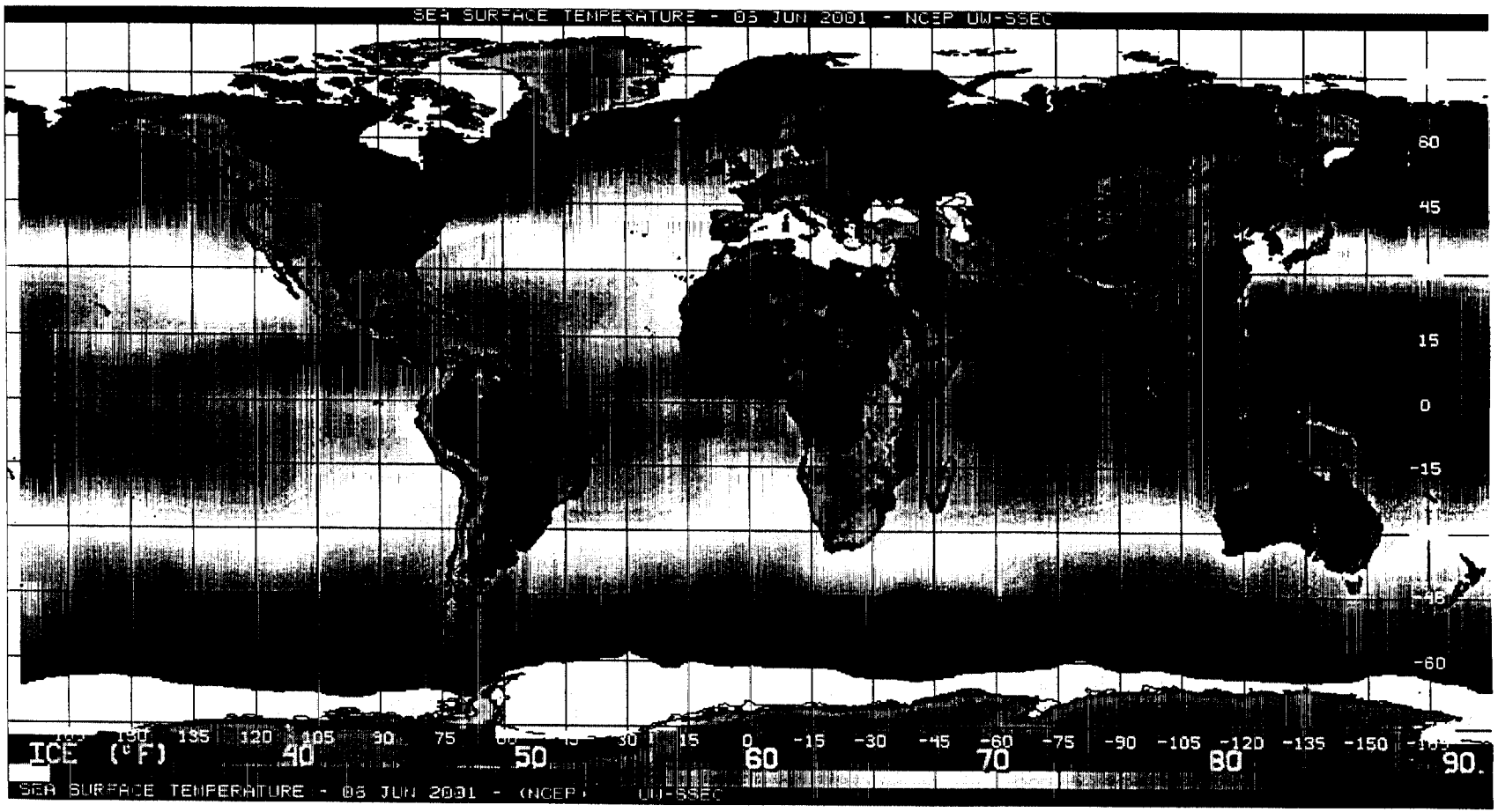
Australian IT Directors' Summit
2001

Ames Research Center

- IT Content Security
- Risk Assessment/Management
- Economics and IT
- Winner of the Next Space Race

Australian IT Directors' Summit 2001

Ames Research Center



Sea Surface Temperature Map
June 6 2001

- Risk Assessment/Management
  - Assessing Risks
  - Articulating Strategies
  - Evaluating Strategies from the Policyholders' Perspective
  - Evaluating Strategies from the Owners' Perspective
  - Refining Strategies

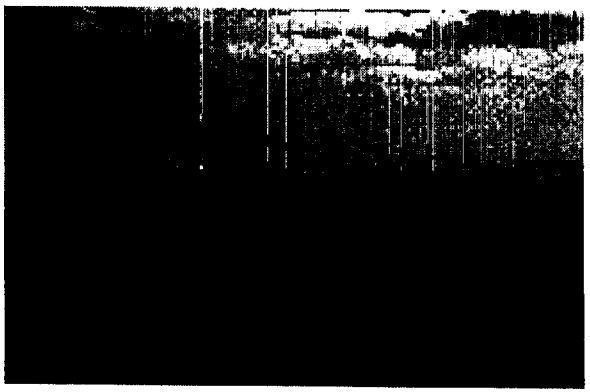
		WorldWide Content Security Forecast by Region, 1999 - 2004 ($M US)							
							1999	1999-2004	2004
	1999	2000	2001	2002	2003	2004	Mkt. Share (%)	CAGR (%)	Mkt. Share (%)
United States	38	71	140	238	358	476	59	66	50
Western Europe	22	41	85	154	248	352	34	75	37
Asia/Pacific	4	9	18	35	62	86	5	85	9
ROW	2	4	8	13	21	38	2	81	4
Source: IDC									

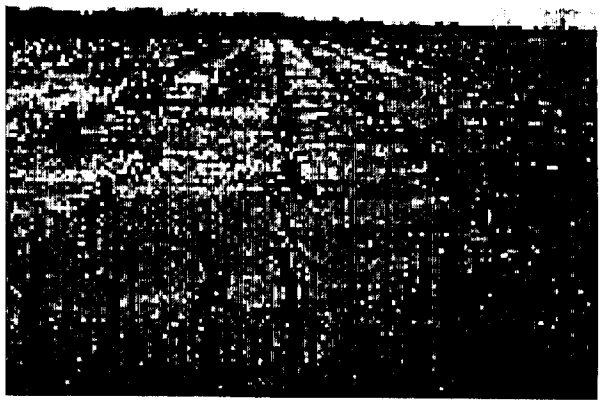
CAGR = Compound Annual Growth Rate

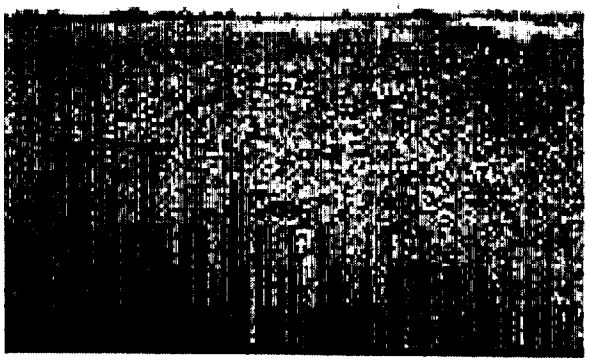
ROW = Rest of the World

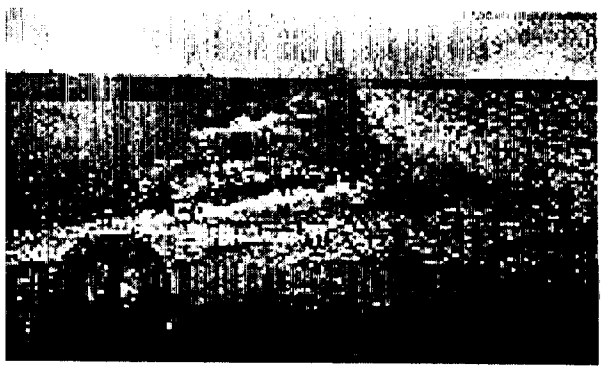
Australian IT Directors' Summit 2001

Ames Research Center









- Forecasts for Commercial Services is estimated at $281B US 1999 - 2005

- 50 % of these Services are forecast for the International Market

- Potential Markets Areas

- The technology is already orbiting the earth every day of the year, the Internet is world-wide, and the international financial community now trades around the world, and around the clock.

- Just imagine.....

- Technology itself does not change things.
- The financial and investment community have far better insight into the market future than national and international space agencies.
- For the full potential of these markets to be realized, the financial and investment communities need the ease of IT access to the achievements of NASA and the international space community.

Next Space Race is in IT

The next Space Race will be in the economic applications from space and science technology. As NASA science and technology has global application; IT is global, economics is global; surely there are great untapped potentials in finding the IT links of commonality among these three. The Economics of IT will continue to depend upon solution providers creating new methods that capitalize on linking information and information centers with the applications community for business and economic functions..

New and innovative IT vendors who's increased efforts to apply evolving technologies and principles that power the e-business revolution are now seeing the business of government being transformed in a similar fashion. NASA will be a prime example of IT transformation.

Potential benefits of e-government are identical to the benefits of e-commerce, which start from value derived from capabilities and assets. The capability and asset wealth of NASA technology and data mass scattered through hundreds of archives will one day provide incredible economic benefit across international and corporate boundaries. Yet the ability to economically benefit from bridging the gap between capability to billable service has yet to find it's first major market.

A primary aspect of NASA has been to gather, research and comprehend mass information as the primary function for decision making[1] prior to putting people in orbit, administrative and even basic budgetary functions. NASA has greatly benefited from IT, yet still needs creation of public service Internet portals equivalent to AOL or Yahoo. IT solutions are needed to first organize what information and which evolving technologies are first to benefit global economic methods and systems. Next, IT solutions are again needed to bridge the gap between technology providers and the true user community, and provide an on-line delivery system.

If cost reduction is one important motivation for the economics of IT, so is the requirement to respond to new expectation of government for deliverables and service. The single problem in dealing with government is the mass of complexity and reorganization efforts due to shrinking budgets. Yet the boundary distinction between the commercial world and government is slowly dissolving as both have growing dependency on the identical IT solution provider technologies and methods.

The users should not need to know anything about the way government is organized and still access needed programs and services. The personalization of IT is essential to allow rapid access to frequently needed services on-line. Yet scrutinized budgets make it difficult at each government agency to adopt a common technology infrastructure that evolves with the needs of the nation as well as that agency. The fear is re engineering existing systems for government IT systems rather than applying evolving systems that commercial groups have grown to expect. Validity will be seen in cost reduction for e-

government and profits in e-commerce. These linkages need to be made, and IT networks will be essential.

Ultimately the role of government, science, and technology linking to the business world will find greater dependence from this increasingly common ground of IT solutions and technologies. Therefore the future role of the IT industry may be as much administrative as technical, ultimately of critical importance furthering the role of science into application.