

Planning for NASA's Future

The Project Management Shared Experience Program

Hagerstown, Maryland

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Five Areas of Vital Change

by Dr. Edward J. Hoffman
PPMI Program Manager

Dr. Edward J. Hoffman, Program Manager of NASA's Program/Project Management Initiative (PPMI), welcomed the largest number of participants, 160, to the third biennial Project Management Shared Experience Program (PMSEP). Hoffman, who is responsible for training and development programs at NASA, briefly outlined the five areas of vital change to be covered in the next few days by speakers from NASA, industry, government and academia.

"Two years ago NASA was in the start-up phase of major change," Hoffman noted. "Today we are in the midst of profound transformation." There are five significant areas of change which will be highlighted in this workshop. First, we will look at the major impact on the Agency resulting from various "reinvention" efforts throughout Federal government. Second, we will explore NASA's efforts in strategic management planning. Third, we will explore the new global economy, where NASA is experiencing even greater international cooperation and partnerships. Fourth, new forms of industry and interagency collaboration are also taking place. Finally, the very nature of project management itself is changing, especially in the innovations required for managing complexity.

"In virtually every area of our organization we see the signs and impact of change. It is no longer an issue of whether things will be different," he noted. "Now the question focuses on *how* things will be different." With that, the sharing and networking began.

Major Space Policy Issues

by Dr. John Logsdon

In touching on several past and present space policy issues, Dr. John Logsdon, Director of the Space Policy Institute at The George Washington University, kept returning to his main point: To bring stability to the space program we must seek to use space not for political reasons but on its own merits.

In a document once marked "SECRET" and "CONFIDENTIAL," Logsdon showed NASA's first long-range plan of 1960, calling for unpiloted probes of Venus and Mars in 1962 and 1964, the building of a permanent near-Earth space station in 1965-67, and, of course, human flight to the moon beyond 1970. (Logsdon had just returned from the funeral of NASA's first Administrator, 1958-1961, T. Keith Glennan, who developed that plan.)

Then Logsdon showed a copy of a memorandum dated April 20, 1961, from President Kennedy asking Vice President Johnson to serve as Chairman of the Space Council and to make sure NASA was working around the clock to "win" the space race by "beating the Soviets" with "dramatic results." Another memo, from James Webb and Robert A. McNamara to Vice President Johnson on May 8, 1961, stressed planning for "specific missions aimed mainly at national prestige." All this culminated in a prepared speech for JFK to Congress on May 25, 1961, to which President Kennedy added that the Apollo Program in space "in many ways may hold the key to our future on Earth." NASA grew exponentially from this politically motivated space race.

By 1971, just a decade later, the political pressures had shifted to reduce Federal spending. Since 72% of that budget involved congressionally mandated entitlement programs and debt interest, NASA fell into the 28% of the budget that was controllable. In an August 12, 1971, memo to President Nixon, both Caspar Weinberger and George Shultz argued strenuously for completion of the Apollo Program (two more flights, 16 and 17) and the future of the

Manned Space Program (Skylab and Space Shuttle), each marked for cancellation. They were spared because they "give the American people a much needed lift in spirit and because they show American superiority." The competing nuclear powered NERVA rockets, which would "secure substantial scientific fall-out" and assure that "large numbers of valuable scientists and technicians are kept at work," did not fly.

THE WHITE HOUSE
WASHINGTON

April 20, 1961

MEMORANDUM FOR

VICE PRESIDENT

In accordance with our conversation I would like for you as Chairman of the Space Council to be in charge of making an overall survey of where we stand in space.

1. Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man. Is there any other space program which promises dramatic results in which we could win?
2. How much additional would it cost?
3. Are we working 24 hours a day on existing programs. If not, why not? If not, will you make recommendations to me as to how work can be speeded up.
4. In building large boosters should we put out emphasis on nuclear, chemical or liquid fuel, or a combination of these three?
5. Are we making maximum effort? Are we achieving necessary results?

I have asked Jim Webb, Dr. Weisner, Secretary McNamara and other responsible officials to cooperate with you fully. I would appreciate a report on this at the earliest possible moment.



Figure 1. President John F. Kennedy was anxious to find out how to catch up with and beat the Soviets, as indicated in this once-secret memo to Vice President Lyndon B. Johnson.

In the next decade, James Beggs and Hans Mark briefed President Reagan that a Space Station bigger and better than the Mir would be “a highly visible symbol of U.S. strength,” not for its own sake. After the President endorsed Space Station, the Congress endorsed lunar settlements, but neither were accomplished by the decade’s end when, on Nov. 2, 1989 it was stated that the National Space Policy (NSPD-1) essentially “has been, and continues to be, space leadership.” Although President Bush’s last budget had projected \$20 billion for NASA in FY1995, the 1990s brought in a great deal of instability and uncertainty for NASA, beginning with the Augustine Commission Report in 1990. The Space Station program experienced a series of changes, budgets were tightened, military use of space became questionable, and new ways of doing business changed the relationship between government and the private sector.

As for the future, Logsdon mentioned only two major space policy issues: the need for a new space transportation system and increased international cooperation involving interdependence and joint planning.

Discussion came full circle during a question-answer period when it was pointed out that President Kennedy did not have the whole nation and Congress in support of a human mission to the moon and back by the end of the decade. In fact, a Gallup Poll indicated 60% opposed to Kennedy’s goal for Apollo, yet it flew. Logsdon, author of *The Decision to Go to the Moon: Project Apollo and the National Interest* and a 1992 member of the White House Space Policy Advisory Board, thinks that when space activity becomes depoliticized, viewed on its own merits, the space program will become stabilized.

The New Congress

by Nick Fuhrman

As a senior staff member for the Subcommittee on Space and Aeronautics of the House Committee on Science, Nick Fuhrman was appointed by Chairman Robert Walker (R-PA) in 1995 to oversee the budgets for the International Space Station, the Reusable Launch Vehicle program and various other international and launch issues involving NASA. Fuhrman first joined the subcommittee staff in 1991, specializing in space cooperation and trade with the former Soviet Union.

“Congress loves spin-offs,” declared Fuhrman. Members of Congress, he said, find the NASA formula of seven dollars in return for every dollar invested in aerospace as “plausible,” despite “a \$5 billion cut hanging over your heads.”

Spin-offs are usually defined as technology twice used. The technology is developed in government programs and projects, and then the technology is transferred to the private sector.

TECHNOLOGY TRANSFER MODEL
Spin-Off

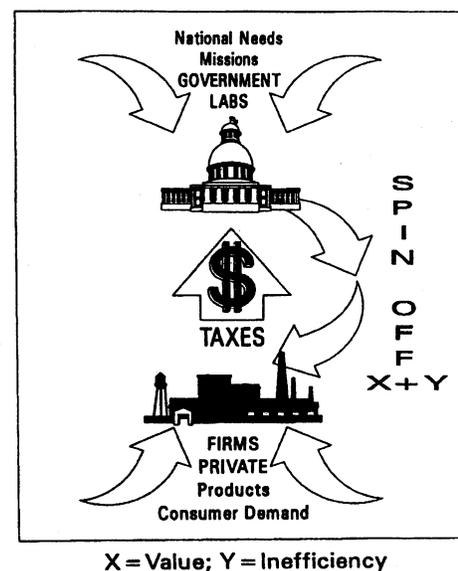


Figure 2. Tax dollars create technologies transferred to the private sector in the Spin-Off model.

However, "Spin-on is where it's at today," he said, pointing to "a lot of smart stuff in the streets we could use." Spin-ons would complete the circular motion of tax money moving in and out of both government and industry. When the Not Invented Here (NIH) attitude gives way to procurement of off-the-shelf items whenever possible, said Fuhrman, the government saves money and industry sales are stimulated. Industry also becomes encouraged to produce more state-of-the-art products as a supplier to government. "Inefficiency," he noted, "led to the downfall of the USSR."

Spin-ons, as described by advocates, tend to reduce inefficiency in technology transfer by incorporating current products and equipment rather than creating new-ones.

In a question-answer period late that first evening, John Logsdon and Nick Fuhrman both observed that "there is more money in the space industry than in NASA."

TECHNOLOGY TRANSFER MODEL
Spin-On/Spin-Off

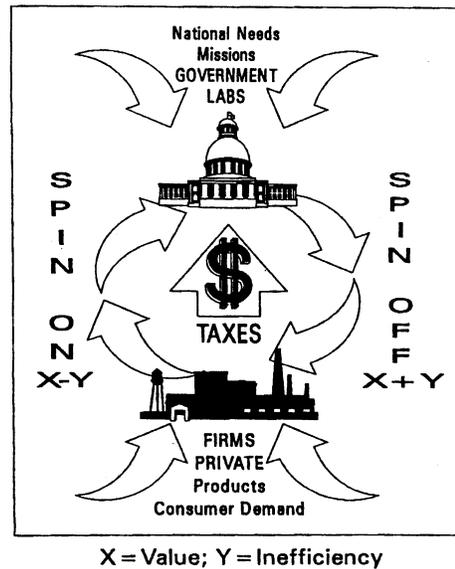


Figure 3. Spin-ons stimulate growth of private sector technologies for federal projects.

Reinventing NASA

by Alan Ladwig

The second day of "Planning for NASA's Future" began with a snapshot of reinvention efforts at NASA and how the Centers fit in. "We're not planning to close any Centers," declared Alan Ladwig, Director of Policy and Plans at NASA Headquarters.

Today NASA has a field center infrastructure designed for an annual mission of about \$20 billion, but by FY2000 NASA will have a total budget projected at only \$13 billion. Thus, considerable restructuring was in progress for an integrated strategic plan in the FY1997 budget process.

Ladwig outlined the five independent reviews that would feed into the NASA Zero Base Review. (See Figure 4.) Guiding principles for each included:

- Eliminate duplication and overlap. Consolidate.
- Stop doing what we don't have to do. Transfer those functions to the private sector or universities.
- Emphasize objective contracting. Define specific product and deadlines.
- Change regulations to reduce engineering oversight reporting. Streamline procurement.
- Return NASA to a research and development (R&D) agency.

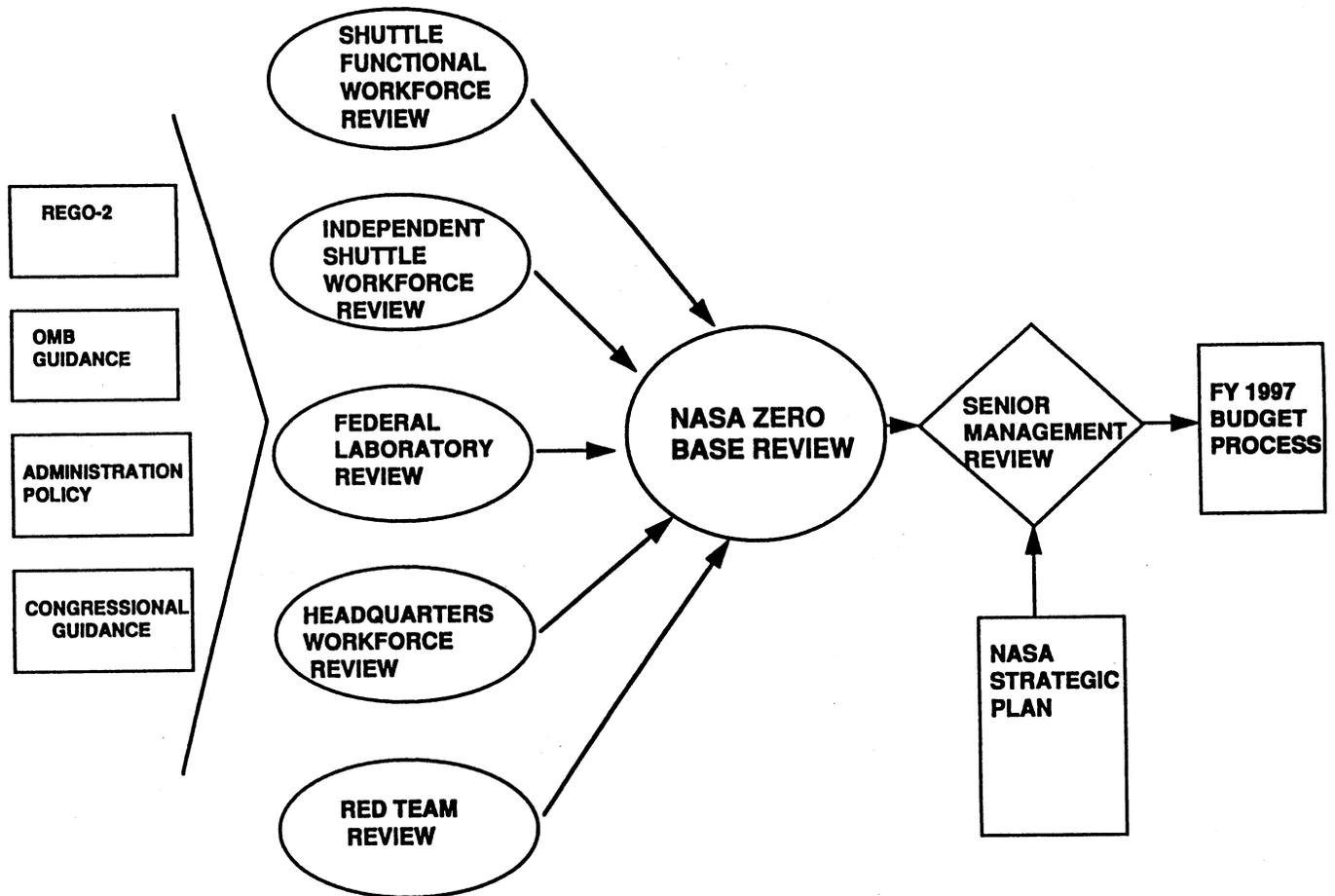


Figure 4. NASA Reinvention Process.

The Comprehensive Zero Base Review was initiated by NASA Administrator Daniel Goldin in September 1994 in response to the National Performance Review and the second phase of the White House Reinventing Government (REGO-2) effort, with additional guidance from the Office of Management and Budget (OMB).

While the NASA Zero Base Review was not scheduled for completion until May 1995, Alan Ladwig did provide a few glimpses into the future. He noted that NASA had committed to work with an \$8.1 billion reduction in "buying power" over the next five years, nearly a 25% budget reduction by FY2000. NASA's civil service work force, already reduced by 1,500 full time equiva-

lents (FTEs) over the past two years, could expect a further reduction of another 2,000 FTEs by FY2000.

The NASA Reinvention Process would continue with a Senior Management Review before final adoption into the FY1997 budget. Guiding senior management is the *NASA Strategic Plan*, which calls for five strategic lines of business, five enterprises that the delegates to the Project Management Shared Experience Program explored and discussed in their second day of meetings.

But first, Alan Ladwig's colleague at the Office of Policy and Plans discussed NASA's "new way of doing business."