A COLLABORATION ON COLLABORATION

by Brent Cobleigh

NASA'S 2003–2004 LEADERSHIP DEVELOPMENT PROGRAM CLASS RECOGNIZED THAT EFFECTIVE COLLABORATIONS ARE OFTEN THE KEY TO ACHIEVING MISSION SUCCESS. PERSONAL CONNECTIONS AND COMMON GOALS WERE KEY ELEMENTS OF THEIR WORK TOGETHER AND KEY FINDINGS OF THEIR COLLABORATION BENCHMARKING WITHIN THE AGENCY.

FINDING OUR WAY

NASA's FIRST LEADERSHIP DEVELOPMENT PROGRAM (LDP) class was asked to define and complete a project that would have a significant impact on the agency. However, agreeing on a project took much more time than any of us expected. Starting in the midst of the Integrated Financial Management rollout, One-NASA implementation, and the Columbia Accident Investigation Board (CAIB) report release, provided a lot of potential topics to choose from. Brainstorming sessions led by our leadership coaches yielded additional ideas.

Projects were proposed to address workforce mobility, aging infrastructure, volunteerism, congressional communications, internal NASA communications, new engineering management models, new NASA TV programming, virtual teaming, and cultural issues between the centers. We had one year to complete the assignment (while also completing two leadership development rotational work assignments, participating in six leadership trainings off site, attending briefings by most of the agency leadership, and maintaining connections with our home centers) and we were encouraged to tackle a Big Hairy Audacious Goal (BHAG).

So how did a group of strangers come to a decision on our project, and what were the results? It's helpful to take a step back and look at how the first question was answered, as it is illustrative of several key findings from our project.

THE MELTING POT

At our first leadership training off site, which served as a get-acquainted meeting, the class of 20 revealed our backgrounds and passion for NASA to one another. We learned quickly that we were a group with diverse backgrounds, in every sense of the word. We represented nine of NASA's 10 centers, and our work experience included scientists, research and facilities engineers, project managers, procurement specialists, lawyers, and senior managers. Our origins included small farms and big cities, numerous military and second-generation NASA families, and several who spent part or all of their childhood outside the U.S.

A subsequent training session had the class complete the Myers-Briggs (MB) personality model. Of the 16 possible MB personality types, the class had members that fell into 12 categories. This further illustrated our diversity, but provoked a concern in some that the class may have difficulty working as a cohesive team.

Several multi-hour discussions and much debate further revealed these personality differences. Team members that registered in the "traditionalist" category were poised and ready to hit the ground running on a project proposed by a NASA Senior Manager. Others that fell into the "visionary" category were deeply troubled about working on a project that did not personally resonate with them. Decision-making conflict also existed between those who preferred a "planned and organized" approach and those who preferred a "flexible and spontaneous" approach. Proposals were made to break the class into two teams, each with a different project, but these ideas were rejected in favor of focusing the energy of the entire team on one BHAG.

CONSENSUS

Gradually, one element, common to several of the proposed projects, became a unifying factor for the class. That element was collaboration, and more specifically, cross-center collaboration. The appeal for studying collaboration was based on its increasing criticality in support of the NASA mission, and its connection to increasing cooperation and breaking down cultural barriers between the centers.

While the collaboration topic was related to other NASA studies (e.g. One-NASA, Diaz report) we discovered that no one had directly benchmarked collaborations within the agency by trying to uncover the elements of success and failure. Several adjustments to the emerging plan were made to satisfy everyone's concerns, but we finally had consensus, the elusive win-win scenario that allowed everyone in the group to "buy-in."

Using the positive energy of the group as fuel, the project moved quickly into high gear. The class established a vision—achieving extraordinary mission success in the twenty-first century through powerful collaborations—and three top-level goals for the project:
1) Catalog collaboration principles and best practices.
2) Infuse collaboration best practices into new and existing tools and programs.
3) Align incentives and structures to support effective collaboration.

This vision was documented in a five-page plan that was used as our marching orders throughout this process. The team then established rotational leadership assignments for the overall project and each of the three goals, and established a set of operating principles that addressed teamwork, communication, and accountability.

OFF TO THE RACES

The first order of business was to establish those collaboration best practices that were inherent in successful NASA programs and projects, and to identify those traits that led to inter-center conflict or otherwise inhibited progress. We decided to survey a number of NASA collaborations to assess their opinions and experiences on a number of characteristics that could influence their effectiveness.

At the suggestion of Chris Williams, the LDP Program Director, we hired an independent Social Psychologist trained in the development, administration, and data analysis of unbiased surveys to help in the process. What a good idea that was! (I have to admit that I was hoping to dig through and analyze the survey data as I had done in years past as a flight test engineer at Dryden.) The consultant helped us adapt a list of potential collaboration drivers, brainstormed by the class, into a two-part survey: a questionnaire requiring a 1-to-7 scale answer indicating the level of agreement to a particular statement, and an interview to be given by members of the class. The questionnaire allowed us to perform statistical analysis, and the interviews provided opportunities for new ideas and unforeseen collaboration impediments to be raised.

Following interview training by our consultant, the class was off to the races, canvassing the agency for the secrets behind good collaboration by interacting with projects with a budget of a few million dollars to massive billion-dollar programs. In each collaboration we targeted survey data collection from a project manager, a lead engineer/scientist, and a support worker on opposite sides of the collaboration. To ensure that we were getting candid responses, we established a process to assure people that their interviews would remain confidential. In less than two months, we interviewed Center Directors, Associate Administrators, and nearly 100 people from 16 different projects/programs across the agency, generating a mountain of data in the process. Additionally, a series of collaboration topics were evaluated by one of the Advanced Program Management classes.

Although we spent several months selecting our project, the class was making significant progress toward our goals. Sub-teams were formed to concentrate on data analysis, training modules, integration of best practices into existing program management processes, systems mapping, and the latter used to identify the best leverage points for improving collaborations. The group had clearly developed a sense of trust and appreciation for each other's abilities over the time we spent together as a group.

Over several weeks, the survey findings were boiled down to the most important elements. These findings were used as the basis for generating the collaboration best practices and a set of recommendations for improving the environment for collaborations within the agency.

THE RESULTS

The collaboration best practices (see sidebar, pg. 38) can be categorized into three areas: human element, project framework, and management involvement. The first area, human element, requires an investment in people, relationships, and communications. The importance of interpersonal communication cannot be overstated. The investment in travel to facilitate face-to-face communication is an investment in the success of the project. When asked what technology could improve collaborations, many respondents answered, "Star Trek transporters" or "faster aircraft" in order to get people face-to-face more often. The pivotal point was that it is not about the technology, but rather that establishing personal relationships is critical to establish trust and a willingness to share knowledge—which in turn overcomes rivalries and differences in cultures and processes.

The second area, project framework, calls for an up-front investment in establishing common and agreed-upon goals, processes, roles and responsibilities, funding mechanisms, and establishing buy-in from all parties—before the project begins. Whether or not roles and responsibilities are clearly defined was found to have a strong impact on the success of collaboration.

A lack of clarity in roles and responsibilities most often resulted in an inefficient use of resources, wasted time and energy, frustration, distrust, and lowered morale. In our own collaborative effort, we found our five-page mission statement to be our bible. Without it, progress could not be tracked.

Cultural differences between centers, when not presented as center rivalry, most often showed up as differences in processes. These differences led to frustration and confusion, and in some cases, mistrust and an unwillingness to communicate. There is also a need for up-front planning to blend processes, rather than allowing one group's processes to dominate. All of these problems can be overcome by increased personal interaction. In this way, people can learn how other centers or organizations operate, and they learn to understand each other's cultures.

The final area, management involvement, employs project leadership to set and model the policies and standards, and it employs center senior management to support, encourage, and occasionally intervene on behalf of the collaboration. Project management must encourage respect for the other partner's knowledge and capabilities. Allowing the development of an "us" vs. "them" attitude is detrimental to collaboration. Getting the teams face to face is once again an effective tool in this effort.

SEEING EYE TO EYE

One manager from the survey relayed a story about a long-running technical disagreement between centers that persisted for months. Finally the teams were brought together, closed into a conference room, and told to solve the problem. They did, less than a half-hour later. We also found that true in our own working group; we would banter thoughts through emails for several weeks, but resolve issues in hours during our face-to-face meetings throughout the year. The survey also indicated that difficult personalities can be highly disruptive to collaborations, especially when ego-related. Project managers must ensure that these people are not in positions that will lead to frequent conflict with

the collaboration partners. Establishing points of contact between the partners to facilitate communication and serve as problem solvers was mentioned as an effective means for maintaining healthy collaborations.

Senior managers' active involvement was found to be key and many were commended in the survey for providing periodic reviews, helping solve funding issues, and avoiding micromanagement. Survey respondents desired a more active role of senior managers in the development of collaboration agreements, setting of project expectations, and management of inter-center conflicts. Additionally, there was a strong desire for senior managers to make personal visits to the collaboration staff and facilities—a clear show of support.

There does not seem to be a widespread use of metrics for management to measure the progress or success of collaborative efforts. The most common measures of project success, often reviewed monthly by center management councils, are schedule, budget, and technical progress. Managers rarely focus on the working relationships and processes, even though it's the team that drives success or failure. We recommend that metrics be developed to assess the health of collaborations. These metrics should be reported as part of periodic project reviews so that issues get addressed in a timely fashion and not be allowed to fester.

INSTITUTIONALIZING

From the very beginning, the class recognized that reports-on-a-shelf accomplish nothing. In order to make a real impact on the agency, the collaboration best practices had to be integrated into NASA systems. With that in mind, a multi-prong approach was initiated. Connections were established with the NASA Academy of Program and Project Leadership (APPL) and, at their suggestion, training materials were generated to support existing leadership training courses. The Chief Engineer's Office supported an effort to integrate collaboration elements into the updated NASA Program Management Requirements and Handbooks.

The groundwork is also being set for a process to assess ongoing collaborations and make the

COLLABORATION BEST PRACTICES

How does your project rate?

>> Managers should recognize that efficient and effective collaborations are the product of relationships.

>> Face-to-face interactions, especially as the collaboration forms, improve the formation of relationships, establishment of trust, and issue resolution.

>> Interpersonal interaction substantially improves the ability to overcome inter-center conflicts.

Partnership agreements must have clearly defined

>> Roles and responsibilities.

>> Shared vision, goals, and objectives.

>> Flexibility to deal with changes over time.

>> Means for decision-making and conflict resolution between the parties.

>> Funding processes.

>> Buy-in!

>> Processes and procedures should be agreed upon, understood, and documented.

>> Points of contact should be established to manage and resolve issues.

>> Successful collaborations require sufficient travel.

>> Health of collaborations should be measured, continually assessed, and discussed at management reviews.

Managers & Leaders should

>> Encourage and model respect and appreciation for each other's capabilities and knowledge.

>> Recognize and reward team members timely and peer driven most effective.

>> Consider personality compatibility.

>> Ensure that difficult personalities are not in position to disrupt collaboration.

>> Have collaboration as a performance plan element.

Senior Managers should

>> Review projects, support funding, and avoid micromanagement.

>> Personally visit project staff and facilities.

>> Play an active role in the development of collaboration agreements.

>> Set project expectations.

>> Manage inter-center difficulties.

recommendations necessary for them to achieve the highest standards. A class member also participated in the addition of "teamwork" as a new performance plan element for leadership positions. In order to illustrate the value of collaborations to the agency's mission, a new NASA Peer Award is also being established. A forum on collaboration also ran on NASA TV. Lastly, the LDP class is fanning out to brief all NASA centers at senior leadership meetings and town hall meetings on the best practices for successful collaborations.

FOLLOWING OUR OWN ADVICE

Without knowing it a-priori, our LDP class followed many of the important collaboration practices in the conduct of our study. First we spent time getting to know each other, our backgrounds and personalities. Second we worked, with some conflict, until we achieved buy-in on a common vision and goals. Next we defined roles and responsibilities and a set of operating principles that, in retrospect, the team closely followed. Throughout the process, our commitment to achieving the project goals for the betterment of the agency took priority over any parochial concerns or personal agendas.

It is our hope and our vision that greater attention will be given to the nurturing of our collaborations across the agency. Highly effective collaborations are a key building block to fully achieving the vision of One-NASA and ultimately succeeding in our important mission. •

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