

NASA: Shifting Gears (and Culture) in Space

Amidst everything going on in the Universe currently, why is culture top of mind at NASA?

2010 marks the end of the Space Shuttle program and a decades-long focus on the safe launching and return of these unique spacecraft. Their new directive is to go back to the moon, then Mars and beyond, finding new ways to sustain human life for extended periods of time in space. With this new directive comes the “Constellation Program” – a program that will rely on a new generation of technology and equipment for space exploration (see sidebar).

The Marshall Space Flight Center (Marshall) in Huntsville, Alabama, is one of the 10 key NASA space centers playing a pivotal role in this new mission. Marshall’s role in Constellation is to design and develop the propulsion systems that will take us into the next phase of space exploration as well as those systems that will help support life in these unique environments. Specifically, Marshall is responsible for the development of the Ares I crew launch vehicle and the Ares V cargo launch vehicle, both essential vehicles for space exploration. They are also responsible for developing the propulsion and life support elements for the Altair lunar lander (see sidebar).

Changing Directions

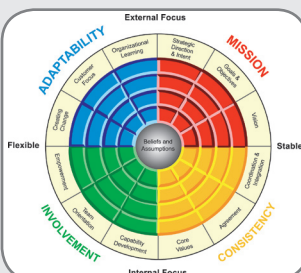
During NASA’s transition period over the next few years, one of their biggest challenges and top priorities is to safely complete the Space Shuttle program and assembly of the International Space Station, while at the same time retooling and developing the new systems for the Constellation program. “In terms of value disciplines,

organizations are usually seen as a product innovator, a customer service leader or an operations leader, a Google vs. a Nordstroms vs. a FedEx – we have to maintain all three disciplines and within a regulatory environment since our customers are the citizens of the United States and Congress – the task is huge,” comments Dr. Jim Andrews, Manager of Organization and Leadership Development at Marshall.

This is the most dramatic shift in Mission NASA and Marshall have experienced since the shift from the Apollo Program to the Space Shuttle Program over 30 years ago. It is a tremendous opportunity for the organization to focus on creative and innovative new research. It includes vast changes not only to the facilities, tools and processes in place in the organization, but more significantly to the skill sets and mindset of the people who will bring the mission to life. Organizational culture has been a keen area of concentration at Marshall as they make this transition. To help them better understand their current culture and how best to prepare Marshall for this exciting new challenge, they’ve turned to Denison Consulting and the Denison Organizational Culture Survey. According to Andrews, “The Denison model and survey offer us an opportunity to benchmark our culture against one of the most robust databases in the world.”

Culture at Marshall Space Flight Center

NASA as a whole and Marshall in particular value their highly skilled workforce as the most critical resource for making this transition successful. From a broad perspective, the transition from Shuttle to Constellation



The Denison Model of Organizational Culture

The Denison model measures behaviors in four key traits that an organization should master to be effective:

- *Mission: Do we know where we are going?*
- *Adaptability: Do we understand our customers and the market?*
- *Involvement: Are our people aligned and engaged?*
- *Consistency: Do we have the values, systems and processes to get us there?*

involves shifting from an operations focus to a more innovative and design focus. This effort is coupled with integrating a new generation of workers with the existing workforce. "We're focusing on integrating the newer generation and trying to diversify the workforce so that there are many different ideas and thoughts incorporated into everything we do," comments Andrews.

Marshall itself is a very diverse center with a variety of business lines including: the space transport systems and propulsion systems dedicated to making the various space crafts fly; the human related space system development and integration systems for sustaining life in space; and scientific spacecraft, instrumentation and research which supports the International Space Station and also informs earth science. With this diversity comes many different sub cultures that live and work together at Marshall. Understanding and proactively managing these cultures is key to aligning and integrating them to fulfill the new mission. According to Bryan Adkins, President of Denison Consulting, "We are both honored and humbled to have NASA and the amazing people at Marshall involve us as partners in this historic process. I can't think of another organization whose culture has come under such scrutiny, and the leaders and employees at Marshall Space Flight Center clearly understand how critical their culture is to their Mission success."

Dr. Andrews cites two primary objectives for assessing and benchmarking the culture at Marshall. First, after the Columbia disaster in 2003, NASA recommended that each of the centers assess their culture and look at how information was being brought up and down the chain of command. The people at Marshall took that charge seriously and have completed a cultural evaluation every 18-24 months to look at cultural barriers to mission safety. The primary second objective for benchmarking the culture according to Andrews, is to be able to "have indicators to help senior leaders look at the Center-wide culture as well as the different subcultures and identify what levers we need to focus to help make the

appropriate culture shifts. We researched many models and surveys and Denison had the practical application we were looking for."

The leadership at Marshall has done extensive work to map the competencies of employees from Shuttle to Constellation and they are confident that there will be a relatively smooth transition for the workforce. The Denison Organizational Culture Survey is helping them to identify potential cultural issues and to proactively manage their human capital as they move forward. "Most every organization has a vision and critical strategies that they want to accomplish," comments Adkins, "but when you think about the scale and scope of what NASA is trying to accomplish with this new generation of space exploration, you can't help but be inspired. We are working hard to help the people at Marshall translate their culture data into specific actions that will help them do their work more effectively. Everyone at Denison is thrilled to be able to play a part in their success."

Constellation Spacecraft at Marshall Space Flight Center

Ares I crew launch vehicle is a combination of a two stage rocket and the Orion crew capsule is scheduled to deliver 4-6 crew members aboard the Orion into orbit by 2020. This project involves multiple space centers and is lead by the team at Marshall.

Ares V cargo vehicle, considered the "heavy lifter," will carry into orbit larger satellites, larger payloads, it will transport materials and hardware as well as science equipment, food, water and staples.

Altair Lunar Lander enables astronauts to work and live on the moon for extended periods of time, providing them with the experience and training needed to launch and expand further into space.

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