



A close-up photograph of a white astronaut glove, showing the fingers and thumb. The glove is set against a deep blue background filled with stars and nebulae, creating a cosmic atmosphere. The lighting highlights the texture of the glove material.

Lessons from space for the global virtual workplace

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EXECUTIVE SUMMARY

Today's workplace teams are likely to have members from all over the world. Differences in culture, language, accents and technology can be barriers to performance. But a number of tools derived from NASA's space program can bring your global virtual teams together. Adapt mission rules to handle different accents, tie things together with cultural intelligence and pay attention to the specifics of communication.

Early in life, I wanted to be an astronaut. You might say, “Well, most kids do,” but that dream was serious for me. I took flying lessons for three years starting at age 13. I entered college as an ocean biology major in hopes of working with NASA’s life sciences program. In my second year of university, though, I discovered my passion for public speaking, which set me on a completely different career path.

Nevertheless, the space program continues to provide valuable lessons for the work I do now, leading global virtual teams that wish to reach high performance.

Let’s look at the challenges that space-exploration teams face while working with some of the most complex engineering systems in the world and analyze how to apply many of their best practices to our own business scenarios.

Linking the four performance zones

Businesses today often have teams dispersed all over the globe. Even colleagues working in the same building are likely to spend the majority of their time communicating virtually. As virtual team members move across borders, they face cultural differences, language and accent barriers, technology issues and demanding communication requirements. As organizations grow their global presence, their workforce may need enhanced, specific skills to make an effective transition to the virtual workspace.

What does it take to reach high performance in a global virtual team? Four areas of work interaction must be robust and maintained over time. Let’s call them the four performance zones, and they include relationships, communication, process and cultural intelligence. None of these performance zones exist in a vacuum and all work in connection with each other, but each has specific attributes that optimize a virtual team.

Let’s begin by exploring the performance zone of relationships. Much of the research on virtual teams today points out the important difference

between trust and closeness. The fact that you have trust in a virtual team member’s competence and ability to meet commitments does not mean you feel close to that person. Both trust and closeness are critical for a virtual team to enter the high-performance relationships zone.

Closeness means that you can feel authentic with a team member. You get into a flow and rhythm with that person, and you also feel a sense of belonging with the team as a whole. But how do you find that closeness, that common ground upon which the team members can stand firmly, especially when the team is culturally diverse? A great role model for this achievement is the International Space Station. Here are some facts about the station:

- It is visited by astronauts from 15 countries.
- The principals are the space agencies of the United States, Russia, Europe, Japan and Canada.
- Each partner has the primary responsibility to manage and run the hardware it provides.

The International Space Station crew has to learn to work across cultures, but to survive each member also must have a strong sense of shared identity. The station is made up of components from all over the world, yet it must be a cohesive, whole structure to function. Crew members learn to focus on their common goals of keeping the space station functioning optimally, running scientific experiments and making repairs.

These goals, however, are not enough to create closeness. Crew members often engage in informal team-building activities such as games, listening to music and friendly sports rivalry. During a big soccer (football) match on Earth between Germany and the United States, the space station’s Expedition 40 crew had two U.S. Americans and one German on board. The team made a bet that the losing country’s astronaut would shave his head. The U.S. lost, and the two U.S. astronauts stuck to the deal. The sacrifice of hair not only brought laughter and camaraderie but

also heightened the sense of shared identity within the team. This closeness made it possible to face the inevitable challenges that astronauts face in space.

How can we take some of the best practices of the ISS crew to apply to our own teams? The sky is the limit, no pun intended. Create a logo for your team that incorporates elements of the whole and the individual parts, similar to a mission patch. Play together virtually through digital team-building games. Or hold a virtual happy hour, where the team uses video to have a drink or pizza together. Toast your accomplishments after a project. Create a cultural quiz about the various cultures on your team and make the answers part of a conference call. Engage in daily informal communication and banter using tools such as Lync, Skype, Yammer or instant messaging.

The more creative you can be with virtual closeness, the more your team will receive the benefits and achieve better results.

Accent on mission rules

Next, let’s explore the performance zone of process. Once again we can look to the space program for lessons. NASA’s Apollo program in the United States, designed to put a man on the moon, was one of the most complex endeavors of all time. Succeeding at a mission of this magnitude required not only precisely machined hardware but also total alignment of the NASA team and its partners. How did NASA achieve this alignment with so many challenges and so much at stake?

During the lead-up to the Apollo missions, members from all levels of the Apollo team discussed potential system failures, what if’s, in-flight scenarios and more. Those discussions led to one of the most important factors in the success of landing Neil Armstrong on the moon — mission rules. In NASA’s words, the flight mission rules “outline preplanned decisions designed to minimize the amount of real-time rationalization required when non-nominal situations occur during the terminal countdown, the flight phase and recovery operations.” In other words, team members didn’t wait until obstacles came up to

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explore potential solutions; they talked about it in advance.

Mission rules defined every aspect of a planned mission, leaving very little to chance and avoiding incorrect assumptions. The goal was to get the team members into alignment. The NASA team outlined everything, from the general to the specific: terms and acronyms, roles and responsibilities, launch procedures, communication protocols and more.

For example, here is a mission rule listed under Guidelines for Apollo 11: "From liftoff to tower clear, the Launch Director and the Flight Director will have concurrent responsibility for sending an abort request."

If mission rules led to the success of complicated moon landings, how can we apply similar rules to our global virtual teams and lead them to success as well? Let's take an example. One of the most challenging aspects of working in a virtual environment, especially across borders, is that people speak with accents. If people cannot understand each other in the most basic communication situations, how can they be expected to perform at their highest levels? Fellow team members don't want to ask each other to repeat what they said over and over and create embarrassment for everyone.

Enter mission rules. Teams and their leaders should discuss potential solutions to language and accent barriers in advance, not during a mission-critical meeting or situation. Start the discussion with a simple but collaborative statement about the reality of the team's communication.

"We have many various languages represented on this team, though we are conducting business in English. We also all appear to have accents to each other, which can make it difficult to get things done. Communication is everyone's responsibility, so what can we do now to address language and accent issues before they come up in the future?"

The team then devises mission rules to answer that question. Team members might agree, for example, to ask each other to repeat things three times before turning to an alternate method of instant messaging. They

might also make a glossary of terms, acronyms and industry jargon to help new team members come on board. By making these agreements in advance, team members don't need to fear asking colleagues to repeat something. It's in the mission rules that they themselves created. These mission rules (also sometimes called team norms or team agreements) can be made about many aspects of working together, including the overall purpose of the team, how to make changes to software code and how to celebrate project success together.

Tied together with cultural intelligence

The four performance zones are deeply entwined, with the effectiveness (or ineffectiveness) of one bleeding into the other. A zone of cultural intelligence is needed to ensure that zones of relationships and process flow smoothly.

For example, team members from some cultures might feel uncomfortable creating mission rules alongside their manager, preferring instead that the manager create them and mentor the subordinates on their use. Another person's cultural background may influence the extent to which he or she will agree or disagree with a proposed idea for mission rules. Cultural intelligence is more than the do's and don'ts; it is the ability to adapt your behavior in culturally appropriate ways while remaining authentic to yourself. This task is not easy; however, a little research can go a long way. Here are things team members can do:

- Talk with other people from a culture you work with.
- Ask questions about what makes them feel included or excluded.
- Read the history of that culture.
- Pursue intercultural training for your workforce, or use a cultural tool to learn about the central values of that culture.

Multiple studies show the impact of cultural differences aboard the International Space Station. Astronauts from different nations had to develop attributes such as patience and empathy. They had to see situations through

a lens other than their own and cope with ambiguity. These efforts made it possible to cooperate in complex situations, especially on long-duration missions where team alignment and interpersonal skills were critical to mission success.

Teams succeed when all members acknowledge their cultural differences and incorporate them into their way of working together.

Be careful not to try so hard to find common ground that you lapse into "friendly avoidance" of the differences that make you a strong team. Global virtual team members need to find and acknowledge both their commonalities and differences to achieve their highest performance.

The specifics of communication

The last performance zone we will explore is communication. This zone is a topic worthy of a multivolume book, so in the interest of time let's focus on a few best practices.

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In 1975, the U.S. and Russia formed an unprecedented series of partnerships in space exploration, starting with the Apollo-Soyuz project. These partnerships, alongside other space agencies in Europe and countries such as Japan, Canada and South Africa, culminated in the creation of the International Space Station. One of the most important lessons that the partners learned during this process was that people define the same thing differently based on their experience, worldview, culture and organizational function. All the communication in the International Space Station partnership was (and is) done in English, though interpreters often helped.

As you can imagine, challenges such as the disadvantage of non-native English speakers, the interpretation of nonverbal communication and differing definitions of the same word plagued the ISS team. According to researcher Jessica Hirschorn, when the United States and Russia were working together on the ISS, the U.S. team gave its Russian colleagues a document that defined who was in charge of what and when. The words used in the document to describe the role of manager, however, were equivalent to



the words master and slave in Russian. An interpreter helped the team solve the issue. Many of these same challenges continue to haunt virtual teams today.

What can we learn from the ISS partners and apply to our team communication? First, we must adapt to a far more specific degree of definition than we may be used to with co-located teams. For example, using words such as urgent, respect or leadership in a global virtual team will not be an effective approach. In any team, those words can have a thousand definitions, depending on whom you ask. When you add the cultural component and the inability to sit together physically, it becomes critical to define those terms.

Rather than say you need something urgently, you might communicate something like this:

"I need this document by 3 p.m. India Standard Time on Wednesday. The latest I can receive it is by 5 p.m. IST because the customer will be shutting down its shipping facility at 5:30 p.m. What issues do you foresee in meeting that deadline? Let's discuss over instant message."

That communication may take longer to write than "I need that document urgently," but you will avoid spending a great deal of time on the back end trying to resolve customer issues.

In global virtual teams it is also important not to assume background knowledge and alignment of industry terms that may differ across cultures. In fact, it's best not to assume anything. To ingrain this message in your mind, remember the incident where NASA lost a \$125 million Mars orbiter because for a key spacecraft operation a Lockheed Martin engineering team used English units of measurement, while the agency's team used the metric system. Be sure to do plenty of front-loading of information to new team members. Have a clear and detailed onboarding process that even includes things you think the team member should already know based on his or her job role.

The adventure is in the relationships

The most successful global virtual team communication comes not just from process and definition, but from a meeting of all of the four performance zones. For example, if you belong to a matrixed organization, you may have to influence without authority. In contrast to a traditional organizational structure, a matrix team is one in which team members work across functions, borders or business areas. The individuals on the team often report

to multiple leaders, either formally or informally. If you have a process for communicating status reports that includes matrix team members, you may not be able to make it stick. In such cases, relationships come in to save the day. To build relationships you need cultural intelligence to know how to gain trust.

Working across distance and culture is always an adventure, but one with many rewards.

The International Space Station is one of the most complex feats of engineering ever created. It was built not only by extreme competence on the part of the partners, but also by focusing on a common goal and being open to tackling the inherent difficulty of global virtual work.

Working across distance and culture is always an adventure, but one with many rewards. By paying constant and rotating attention to the zones of relationships, process, cultural intelligence and communication, you can overcome many of the challenges that come with being part of a virtual team.

The more comfortable we get with ambiguity, the less the remaining obstacles will be seen as problems. They may even come to be viewed as exciting, skill-sharpening opportunities. As long as you build trust, prepare, and have all your procedures in place, you will enjoy your flight. ♦