Living in Uncertainty

BY ED HOFFMAN

Project-based organizations like NASA have a paradox embedded in their DNA: the tension between the organization's need for stability and the inherent uncertainty of complex projects.

My colleague Terry Cooke-Davies, global chairman of Human Systems, captured this well a few weeks ago at our Engaging Leaders in Knowledge event:

The way senior management thinks and the way a program manager thinks are completely different. If you are a business manager, you know how you plan. If you are a project manager, you know how you plan. The difference is, the same word means totally different things in the two different contexts.

If you are a business manager, plans start by looking at what we did last year. The way we get to our plans for this year is we look at what we did last year and look how it needs to change for this year and into the future. So planning starts from a known reality and moves into a kind of unknown, hoped-for future.

In projects, what you start with isn't a known reality; you start with a dream. You start with a wish, you start with a desire, you start with somebody's intention that you are going to end up with a new service or product or something delivered, but when you set out, you do not know for sure that it is doable. You don't have a known baseline. You have your best guess of what will need to be done to deliver it. That is a very different activity.

At first glance, it would seem that the best way to master this tension would be to routinize projects and make them more predictable. The problem is that the typical NASA project is a one-of-a-kind system. Innovation is a precondition of its success. This has been true of everything from Project Mercury's Big Joe to Mars Curiosity. Innovation often defies tidy schedules and budgets. In a recent article in *Wired*, Stephen Attenborough, the first employee of Virgin Galactic, described the challenge of soliciting passengers for the company's commercial spaceflight venture:

We were saying, "Look: we don't know how long this project's going to last, we don't know when the product's going to be delivered; we don't know what it's going to look like; we don't really know much about what it's going to be like for you on board; we don't [know] whether you're going to be eligible to fly, because we don't understand too much about the fitness requirements … but if you want to join, we need $200,000 up front."

This is fundamentally similar to the challenge that many NASA projects face. We need resources in advance just to define the requirements of projects that begin with long lists of uncertainties. The quality necessary to survive in this environment is adaptability, which can be at odds with a larger organizational culture that values stability.

The best program and project managers understand that the key to handling this tension is communicating in the right key for different audiences. Senior management needs one level of reporting so they can show NASA's stakeholders that the agency is being a responsible steward of the taxpayer's dollars. Without that, no projects get funded. Team members, partners, and vendors need other kinds of detailed communication about day-to-day specifics. None of this removes the inherent uncertainty of complex projects, but it makes it easier to live with the paradox. ●