

## From the APPEL Director

# Multidisciplinary Project Leadership

BY ED HOFFMAN



If you were building a house, what set of skills would you need? It might be best to be a carpenter, capable of working on the rough framing, the exterior, and the trim details. There's also a good argument for being a mason: a house is only as strong as its foundation, and a good brick or stone exterior will last a lifetime. Then, of course, there are electrical systems, plumbing, heating, ventilation and air conditioning, and other specialized trades.

It's possible that specializing in one construction trade over another has advantages, but the skills I'd want would be those of a project manager. In home construction, that person is called the general contractor, but the responsibilities are those of a project manager: managing cost and schedule, communicating to promote coordination and integration of team members from different disciplines, knowing enough about the technical details to ask the right questions, and ensuring that the finished product meets all requirements and performs as expected.

Project managers have been playing this role on engineering projects since the time of the pyramids. We know this has been the case in research-driven industries since early in the last century. In his book *The Scientific Life*, Harvard Professor Steven Shapin writes that "corporate research centered not on the competencies and career interests of any one worker, or on any one group of specialized workers, but on the *project* [his emphasis], which typically called on the skills of research workers from a variety of scientific disciplines ... placed in organizational structures where communication ... was facilitated and encouraged." He goes on to note that Eastman Kodak, which opened its first industrial research laboratory in 1912, was organizing cross-disciplinary groups of scientists to work on photographic

emulsion nearly 100 years ago. Since then, technical organizations have increasingly organized around projects because they have found it to be the best way to synthesize the efforts of talented individuals with diverse areas of expertise and knowledge.

A modern project brings together people of multiple talents over a finite period of time to accomplish a specific objective. There is a strong focus on understanding the customer—getting the requirements right is critical. The project takes place in a dynamic environment that demands adaptability. Teams typically cross all kinds of boundaries: geographic, cultural, organizational, and professional. Outsourcing for expertise is the norm. Team members can be employees, partners, consultants, or even vendors, which means the project manager has limited authority. So professional management skills like persuasion, negotiation, and collaboration are as essential as traditional project controls like cost and schedule management.

Leading a diverse team of highly talented individuals requires earning respect and trust. The key word is "earning." Credentials matter, of course—experts won't tolerate being led by an amateur—but they are only the price of admission. Team members ultimately care about actions. Respect and trust are reciprocal. When leaders practice them, the team will follow, and vice versa.

A project leader is like an orchestra conductor. An orchestra brings together strings, woodwinds, brass, and percussion, all of which require highly specialized skills. The conductor has to guide the entire ensemble through a composition—a project—that takes place in a finite period of time. Of course, an orchestra rehearses. There is no rehearsal for project leadership; it is a continuous on-the-job learning experience. ●