

Is Your Match Heaven-Made?

There are no bad projects—just bad matches between contractors and projects. Years of research have led me to conclude that the risk associated with project selection can be accurately measured in advance by taking into account a construction organization's experience with similar work. I am devising a convenient system for making that measurement and intend to make the system publicly available for free.

Why do so many construction projects fail to produce a profit, despite the fact that the contractors undertaking them were sure they would be profitable? Otherwise, they would not have taken



SCHLEIFER

the projects in the first place. For many years, I have been identifying and categorizing the causes of non-performance and recently have expanded the study to include project risk management, control and prevention.

Unlike manufacturing, where operations improve with repetition, construction enterprises do not usually have enough repetition from project to project to benefit from familiarity and experience. Project risk is project-specific, so each new job must be assessed against past experience. The closer a new project lies to the average of previous projects, the more likely the contractor will achieve its estimated targeted performance.

For example, let's say a contractor or construction manager has been successfully building relatively straightforward warehouses and strip malls but then attempts its first complex sewage treatment plant. For such a proj-

ect, there will be vessels and all kinds of processing equipment with which the contractor has little to no individual or institutional experience. The likelihood of successfully pricing and producing the work would be very limited, making the project very risky.

The team a contractor puts on a project also will affect the measurement of risk. Experience is accumulated by individual staff members; while a company may have built an arena with a long-span roof, that institutional experience doesn't get transmitted automatically to the individual team members who haven't worked on stadiums and arenas. However, if an organization has an experienced arena project veteran who is not assigned to the actual project, the company can bring him or her in if there is an emergency, cutting the overall risk.

Project location is an important variable in performance success. For example, a U.S. contractor will face added risk when attempting its first project abroad, as will a contractor with experience only in rural and suburban areas taking its first foray into a big city. Changes such as these bring differences in labor productivity, subcontractor availability, pricing and regulations.

Unusual project features also

create risk. Generally, the collective experience of the industry is with "traditional" projects. Most buildings in the U.S. are rectangular, and our roads, highways and tunnels are straight. Unusual and unique project features—such as buildings, windows, roofs, roads, bridges and tunnels that are curved—are outside the experience of most organizations and obviously trigger risk. Gaining the knowledge to build such tricky projects may be a slow, costly process that amplifies risk.

The good news is that important project characteristics can be measured and weighted to produce a numeric scale of risk projections, and all of the data can be updated to measure project performance. To ascertain the likelihood of a successful, profitable completion, I am developing a spreadsheet-based risk-assessment process that reliably relates a company's experience with similar projects.

Few projects have built-in, inherent risk—for example, the expansion of the Panama Canal, a massive infrastructure project. For the day-in, day-out work of construction contracting, project risk is exclusively a measurement relative to the organization's experience. If a company finds projects that fall into its sweet spot, it will control many of the risks that could hurt you. ■

Thomas C. Schleifer, PhD, has operated a general contracting company, served as a consultant to the surety industry and been a professor at the Del E. Webb School of Construction at Arizona State University. He is currently a consultant and author, most recently of "Managing the Profitable Construction Business." He can be reached at tschleifer@q.com.

If you have an idea for a column, please contact Viewpoint Editor Richard Korman at richard.korman@construction.com.