Making the Right Choices for Healthy Software

QSM offers metrics for development shops to estimate projects, see how they're doing

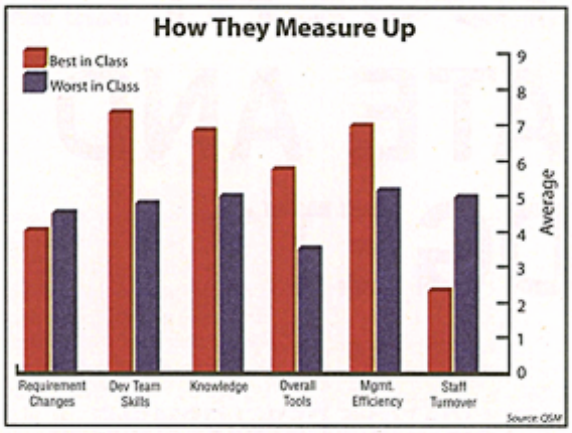
BY DAVID RUBINSTEIN

The best software projects are completed nearly 3 1/2 times faster and 7 1/2 times cheaper than the worst ones, according to new data from Quantitative Software Management.

The best projects take 7 1/2 months to complete, while the worst take more than two years. Further, the best require 19 person-months of effort compared with 141 person-months exhausted on the worst projects, according to the findings. A person-month is defined as one person working for one month.

"This is the state of our industry," said Michael Mah, managing partner at QSM's affiliate consulting arm, QSM Associates. "Software is the capital asset of the information age. When people build software, they want to know how their projects compare."

The information was gleaned from an examination of 563 business IT projects from more than 140 different development groups in more than 31 countries, Mah said, where the average project required 30,000 new or modified lines of code, or 600 new or modified function points.



The best projects handle requirements changes more easily and show better scores in other categories, according to QSM's research.

QSM's metrics look at speed, cost and quality in developing software, and its data is used by organizations looking to estimate how many resources—manpower, time and dollars—need to be dedicated to a project, Mah added. The company offers consulting and training services as well as SLIM, a suite of tools for project management, cost estimation and metrics analysis across the application development life cycle.

"Project managers are under the gun," he said. "Many now use a finger-in-the-wind, nonscientific method of estimating" what's needed to complete a project in a timely, cost-effective manner. "If eight of 10 environmental factors are working against you, don't promise the top 20 percent of schedule performance, and don't underfund the project."

Mah said that as companies move to adopt new technologies and techniques, yet cut the funds they spend on developer training, the knowledge gap can widen. "Knowing the capability of your staff helps in the fight against unrealistic deadlines," he added.

QSM found that the most important factor separating the best projects from the worst is the ability to control changing requirements. "That issue just floats to the top," Mah said. "The best in class dealt with it in an effective manner, while in shops where they don't handle it well, the project whipsawed and jerked around all over the place."

Interestingly, the data discovered that tools are not as big a driver on best projects as skilled people with domain knowledge and dealing with changing requirements. "Even with good tools, not having skilled staff or a handle on requirements didn't save it," he said.

Estimating software projects goes beyond the numbers, though, Mah pointed out. "There are the numbers, like good cholesterol and bad cholesterol. Then, there are environmental factors—do you eat well, do you exercise? The numbers are used to encourage you to make good lifestyle choices." Good development, he concluded, is a lifestyle thing. ■