



Start Your Software Odyssey Here



If you've been on an odyssey (extended journey) looking for the magic formula to successful software intensive systems acquisition — stop, relax, and read this edition of CrossTalk. After 15 plus years of formal software process improvement, numerous case studies, and more review boards and task forces than we care to list ... the secret is now revealed! Get a good start, do quality work, stay on the right course, and work as a team. So simple? Not quite — Each step requires a body of knowledge, talented people, superb leadership, and adequate funding to fuel the program engine.

A good start requires disciplined requirements generation and plotting the right course through sound systems engineering, coupled with the appropriate acquisition strategy. In their article, *The Spiral Model as a Tool for Evolutionary Acquisition*, Dr. Barry Boehm and Wilfred J. Hansen define the relationship between evolutionary acquisition strategies and spiral development. They also describe the six essential aspects that every spiral process must exhibit and some “hazardous look-alikes” that must be recognized. This is a must-read article that summarizes a large body of knowledge related to successful program planning and management.

Obtaining talented people is one of the top issues for most large software development organizations. Retention of software engineers continues to be a major problem for the U.S. Air Force Air Logistics Centers. Contractors in major technology centers find retention even more difficult. In the article *The Next Refinement to Software*, Keith Thurston of the General Services Administration, Office of Government-Wide Policy, outlines some actions required to ensure technology is accessible to individuals with disabilities. Designing systems for accessibility is not only an issue of legal compliance, it's also a means to better employ the talents of the 54 million Americans with disabilities.

Because large software-intensive system developments require a myriad of organizations with different interests (e.g., contractors, users, maintainers, technologists) to function as a team, above par leadership is essential. In their article, *Managing the Invisible*, RADM Patrick Moneymaker and Dr. Lynn Robert Carter outline five principles of leading high-performance teams. They go further by relaying their real-world illustrations of the principles, showing congruence with the best of management thought, and then relate them to software process improvement.

Cost reduction programs have become essential to an organization's ability to maintain sufficient resources to serve customers and accomplish their mission. Steve Perkins, in his article *Streamlined Networking Brings Oracle Big Savings, Better Service*, provides insight to how technology giant, Oracle, changed the way it managed information to reduce infrastructure cost. While exploiting the capabilities of technology to reduce operating costs has been a constant through the ages, the pace of change and number of people involved has certainly increased. The article describes Oracle's approach to centralizing system control while concurrently providing employees improved access to information.

Driven by increased computing power and the desire for more functions, software efforts grow in size and complexity, which in turn increases the risk of software induced problems. NASA's Dr. Linda H. Rosenberg describes how the agency is approaching this issue in *Verification and Validation Implementation at NASA*. Establishing a center of expertise, defining criteria for applying IV&V, and then identifying the projects to participate based on risk are the steps taken by NASA to improve. Likewise, this trend toward more complexity demands more efficient acceptance testing. Automating the validation test (e.g., input control, data collection, and recording) is underway at many facilities. Prototype systems developed by the Air Force Research Laboratory have demonstrated how weeks of testing can be reduced to hours. In their article, *Maintaining the Quality of Black-Box Testing*, Patrick J. Schroeder and Dr. Bogdan Korel of the Illinois Institute of Technology, illustrate how combinatorial test designs reduce test efforts without sacrificing quality.

We hope this issue will help bring your cost, schedule, and quality odyssey to a successful conclusion.

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