Continued from page 1.

it's that this organization developed IT applications that were only about making money. If the company didn't make enough money, at least no one would die from a software defect. (However, if a trading application experienced a major outage, you could practically count the enormous amount of lost revenue by the hour.)

When commercial organizations espouse this philosophy (or lack of one) on quality, other issues might come into play. For example, this could have easily been the philosophy of a company called Ashton-Tate over a decade ago with a product called dBase IV. Remember Ashton-Tate and dBase IV? Time to market was so important that defects suffered severely. While nobody died from the number of defects when the product shipped (although I could be wrong), there was an entity that did die. The company. Word got out about dBase IV being unreliable, and the company collapsed.

Is Quality Really Job One?

This brings us to a subject for IT metrics that is altogether critical — the use of metrics to manage defects and the quality of a system at the time it is placed into service. In fact, about 15 years ago, this is exactly how I wound up involved in the metrics field.

In that past life, I was the group leader for integrated test planning at a major *Fortune* corporation, which was tasked with designing and building a major subsystem under a multiyear, multibillion-dollar project. This project was the Trident II nuclear submarine.

On that ship, defect-free software was crucial. The navigation subsystem that I worked on employed some of the most brilliant scientists I've ever met, designing what was undoubtedly one of the most complex applications in the world. This application basically had to "fly a ship" underwater, without windows, using a combination of inertial navigation, sonar, satellite communication, and gravity mapping tied together with six massive processors running parallel in real time. The stakes were high. For example, if a sub lost its way or even bumped into something in the dark, then a lot of sailors could die. (When I heard about the loss of the Russian submarine Kursk in August, it was particularly painful. Whatever the cause of that disaster, it's clear that quality does matter.)

At that time the goal was to chart the defect rate curves for the software to know whether the project would meet the deadline and operate reliably on that date. To accomplish this, it was vital to optimize the testing strategy across three test facilities to ensure that the system met all its performance and reliability requirements to meet its mission when the deadline came. Using defect tracking and forecasting, the teams executed a strategy that brought the project in successfully. Metrics played a crucial role.

On a side note, we've seen how Hollywood has featured nuclear submarines with movies like *The Hunt for Red October* and *Crimson Tide*. Through these films, many have learned that a single ballistic missile submarine is the third-most formidable "entity" in the world purely in terms of nuclear firepower (after the US and the former Soviet Union). It has to know where it is and where it is going. And it better not crash.

What Defect Graphs Typically Look Like

You may or may not be working on applications for nuclear submarines, but your work is surely crucial to the field that you're in. And along those lines, metrics on software defects can give you a wealth of information to help make better decisions. Metrics told us that dBase IV was an imminent train wreck at the time (we were brought in at the 11th hour). It also told me and my management

Editorial Office: Clocktower Business Park, 75 South Church Street, Suite 600, Pittsfield, MA 01201, USA. Tel: +1 413 499 0988; Fax: +1 413 447 7322; E-mail: mmah@cutter.com.
Circulation Office: ***IT Metrics Strategies®*** is published 12 times a year by Cutter Information Corp., 37 Broadway, Suite 1, Arlington, MA 02474-5552, USA. For information, contact Megan Nields, Tel: +1 781 641 5118 or, within North America, +1 800 964 5118, Fax: +1 781 648 1950 or, within North America, + 1 800 888 1816, E-mail: info@cutter.com, Web site: www.cutter.com/consortium/.
Editor: Michael Mah. Publisher: Karen Fine Coburn. Group Publisher: Anne Mullaney, Tel: +1 781 641 5101, E-mail: amullaney@cutter.com. Production Editor: Lori Goldstein, +1 781 641 5112. Subscriptions: $485 per year; $545 outside North America.