On being the **bearer** of **bad news**

by Philip Koopman

*"Though it be honest, it is never good
to bring bad news; give to a gracious message
a host of tongues, but let ill tidings tell
themselves when they be felt."*
Antony and Cleopatra, William Shakespeare

You've found a major glitch that could disrupt product delivery timelines, but can't be ignored. As an ethical engineer, what should you do?

E ngineers are sometimes in the position of being the bearers of bad news. An experienced engineer will not report a problem empty-handed–it is always wise to have some idea of a solution to present to management. Nonetheless, finding a major problem that disrupts the execution of a project plan can make life difficult for an engineer.

Possible outcomes

The discovery of a major problem imperils management's goal of delivering a product according to a set of constraints. Commonly, fixing the problem extends the schedule past an important deadline. A nastier situation arises when the bad news conflicts with a nontechnical agenda. For example, the customer may be asking for a particular technology, but it may be impossible to create a design using that technology that will actually work. The situation may be particularly difficult when management does not have the technical expertise required to appreciate the nature or severity of the problem.

An engineer's report of a big problem can result in the following impasse. The engineer is insisting that the project will fail unless the problem is fixed. But, fixing the problem will cause the project to fail due to violated constraints. Changing the problem constraints is deemed unacceptable because of market pressures, management goals, or potential loss of face.

The result is a dilemma for management. The engineer says the project will fail if the problem is not fixed. But, management knows the project will fail for nontechnical reasons if the problem is fixed. At this point, management may:
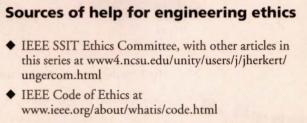
◆ overrule the engineer and declare that the problem need not be fixed;
◆ mandate a quick fix that evades liability, but will not, in fact, solve the real problem. "After all," management may reason, "no design is perfect, and the engineers will figure out a way to patch things up later (the way they always seem to do)";
◆ not truly grasp, nor want to believe, the scope of the problem; or
◆ in fact, plan to deliver a flawed product and simply declare it to be successful.

If management decides not to fix the problem, it is the engineer who is in a dilemma. Of course, the engineer will talk things over with peers and mentors to try to understand what is happening. But, what if, in the end, the engineer doesn't agree with the reasoning behind a management decision? Does the engineer go along with management's decision, and deliver a product with major flaws? What are the risks to the engineer's career of having knowingly designed a bad product? What if someone is likely to be injured or killed? Don't engineers have a professional obligation to refuse to create designs that are dangerous or don't work?

If management decides to press on, the engineer may feel a need to protest. Then, management may perceive that the engineer is the problem. After all, if the engineer weren't standing in the way,

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Sources of help for engineering ethics

◆ IEEE SSIT Ethics Committee, with other articles in this series at www4.ncsu.edu/unity/users/j/jherkert/ungercom.html
◆ IEEE Code of Ethics at www.ieee.org/about/whatis/code.html
◆ WWW Ethics Center for Engineering & Science at www.onlineethics.org/text
◆ Texas A&M University ethics page at www.lowery.tamu.edu/ethics
◆ Virginia Polytechnic Institute and State University ethics page at www.chem.vt.edu.ethics

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there would be no more problem (at least for the time being).

Your options

There are several options available to engineers in this situation, each of which has risk. It is important to discuss the options available with trusted friends and mentors, who might be able to bring some objective wisdom into what is probably an emotional situation. But, ultimately, if you are in this situation, you will have to make a choice from options that include:

◆ *making management aware of the problems and trusting management to make the right decision.* In this case you would prepare the best possible technical recovery strategy for a product fix/upgrade. In most cases, this is the right thing to do, no matter how unpalatable. Many managers reading this will no doubt consider this to be the "correct" solution. However, this approach may, in fact, be wrong if management truly does not comprehend the consequences of their actions. An added risk with this path is that, in some organizations, you may be seen as a troublemaker simply by presenting an above-average number of problems to management, even if you do go along with their decisions.

◆ *standing your ground.* In this case, you may be perceived to be the problem yourself. It is important that you turn out to be right–and, even if management backs down, you may pay a high personal cost. Punishing an engineer who stands his or her ground may have the effect of encouraging others to ignore problems.

◆ *avoiding looking for problems and telling management if you find them.* If you follow Shakespeare's advice and don't be a troublemaker, the risk of being disciplined (in the near term) will be minimized. Things may work out of their own accord. But, you may be shirking your professional obligations, as well as putting your company and its customers in jeopardy. It's hard to see how anybody wins with this approach.

◆ *changing projects or leaving your job.* You can only do this so often, and the personal cost may be high. But, it might be worthwhile if you don't want to compromise your integrity, and standing your ground does not seem worth the cost.

There is no clear answer on how to handle being the bearer of bad news. It is always a good idea to work with management to make effective risk tradeoffs, and try to understand the nontechnical factors affecting decisions. It is also nice if your management views finding problems as a healthy part of the engineering profession. But, there will be times when management goals conflict with your professional and personal interests as an engineer. Then, you may have to choose among compromising your integrity, abandoning the project, or suffering the results of a conflict with your employer. ◆

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