



Risqué Requirements

I thought the theme for this issue was Risqué requirements? By definition, that would be requirements offensive to established standards of decency. I envisioned the cover of the issue adorned by a young Tom Cruise skating across a hardwood floor in a pair of white socks, oxford shirt, and his famous tight-whites. But that was “Risky Business” – which is what you have if requirements are misconstrued.

Requirements are important in developing effective software, so what’s new? Twenty years ago we knew poor requirements were a major cause of software troubles. What have we done in those years? Studied, analyzed, decomposed, recomposed, processed, and defined the requirements of the business of requirements.

We made lists. In this issue alone we have nine lists for requirement risks, eight strategies to mitigate requirements risk, eight good requirements’ characteristics, 16 recommended requirements gathering techniques, eight critical attributes of requirements, and 19 sources of system and requirement risks. We also brought out the alphabet soup of remedies – JAD, RAD, UML, DOORS, QFD, SPICE, CMM, Six Sigma, etc.

With respect to the work performed on requirements, I think the industry has missed the main point – to understand customer needs. The key noun is “customer” and the key verb “understand.”

To understand a customer, we communicate. You think software engineers would understand communication, as it is the wellspring of our commerce. It’s basic; you transmit, and you receive. We spend the majority of our vigor amplifying transmitter power while our receivers run on vacuum tubes, or worse, are vacuums – absent of matter. Yet, reception is vital in acquiring accurate and effective requirements and entails good listening skills. Not just to hear but to listen, pay attention, heed, be au fait with, and comprehend.

I think engineers have problems listening. Don’t believe me? I have \$20 for the first reader to find the word “listen” or “listening” in this issue on requirements, outside of this article.

Engineers would rather decipher the

words to the Kingsmen’s 1963 classic party song “Louie Louie” than decipher customer requirements. It’s time we go beyond gathering requirements and focus on comprehending requirements.

“... for it remains true that those things which make us human [engineers] are, curiously enough, always close at hand. Resolve then, that on this very ground, with small flags waving and tinny blast on tiny trumpets, we shall meet the enemy, and not only may be ours, he may be us.”¹

For those in management, “We have met the enemy ... and he is us.”

There are several reasons for this inadequacy. First, engineers are problem-solving mavens. We have the answers; why would we have to listen?

Let me demonstrate. Two buckets both two feet high and four feet in diameter containing equal mass of water are put outside on a Utah Olympic day (far below 0 degrees Celsius). One bucket’s water temperature is 100 C and the other’s is 50 C. Which one freezes first?

Are you solving the problem? Do you have the answer? You should be asking at least one important question. What are the buckets made of?

If the buckets are zinc-coated iron or steel, the 50 C bucket will freeze first. It starts at a cooler temperature and heat transfer is dominantly through the bucket’s sides. If the buckets are wooden, the 100 C bucket will likely freeze first. Greater evaporation of the hot water carries off more water mass so that less water needs to be cooled. Also, evaporation carries off the hottest molecules, lowering the average kinetic energy of those remaining. Evaporation makes up for the temperature difference given the volume and surface area of the water and insulation of the wood.

Second, engineers often listen for content void of context and intent. John F. Kennedy’s famous statement, “Ich bin ein Berliner,” was grammatically correct but ambiguous and uncommon. It is like saying “I am a Hamburger,” instead of “I’m from Hamburg.” “Berliner” denotes a person from Berlin and “Pfannkuchen” denotes a jelly donut. Outside of Berlin, a “Pfannkuchen” is a

pancake, so the term “Berliner Pfannkuchen” was used to denote the jelly donut in Berlin, which usually gets shortened to “Berliner.” Berlin natives understood Kennedy because they understood context and intent. Engineers, on the other hand, thought he was a gooey pastry.

Third, engineers view requirements as constraints to creativity. *The Cat in the Hat* was Ted Geisel’s response to John Hersey’s revolutionary article “Why Can’t Johnny Read?” Geisel used a pre-determined list of 223 words to create the classic alternative to Dick and Jane. It’s rumored that Geisel wrote *Green Eggs and Ham* on a bet from his publisher, Bennet Cerf, to write a book using only 50 different words. Dr. Seuss did not see constraints; he saw challenges.

Finally, engineers have tin ears for prosody, discourse, and rhetoric. Take the expression “I could care less.” My colleagues suggest this expression of disdain is illogical and should be “I couldn’t care less.” They argue that if you could care less than you do, you really do care, the opposite of what you are trying to say.

Lighten up Spock! Stop focusing on the logic and listen to the stress and intonation. The original expression is pronounced – I could CARE LESS. It’s not illogical; it’s sarcastic. The point of sarcasm is to make an assertion that is manifestly false or accompanied by ostentatious intonation, to deliberately imply its opposite. I know; you could care less.

As a précis, I sense engineers have a hard time listening because the principles, techniques, and skills associated with listening are considered soft science. Engineering is based on hard science. It would be easier to turn Luke Skywalker to the dark side than it would to turn an engineer on to soft science. How ironic, we build software but we snub soft science.

Looking at the software industry’s record, our requirements are risqué – offensive to established standards of listening. Are you listening?

— Gary Petersen,
Shim Enterprise, Inc.

1. From the foreword to *The Pogo Papers*, Copyright 1952-53.