

Crossing the Digital Divide (v82)

“Problem Solving”

By Joseph Feigon

For the Observer

The Internet is analogous to a roadway: dirt and graveled, paved, or a 75 lane superhighway. The Internet isn't a destination, it's a global mishmash of high speed digital circuits, all resembling a roadway of some sort, each leading to a destination, most often, a computer. The Internet retains zero content. Content resides on a computer (or computers) in an office, data center, or someone's home. Living on a dirt road shouldn't (and doesn't) mean you can't have a suitably high speed onramp to the Internet. In most cases, with the right technology and service provider, your Internet access might look like Highway 101 in the 65MPH zone - ample speed and space to get things done. That said, this weeks' column borrows content from Craig Humphreys and Dr. Leonard Bertain. “5/67 Problem Solving: How to Solve Wicked Problems Correctly”.

First off, we offer a discussion of the three classes of problems as we see them. They are: stupid problems, difficult problems, and Wicked Problems. We like to capitalize the words Wicked Problems because of the unique and challenging nature of that type of problem.

The characteristics of the three problem types are summarized below, and covered in great detail in the subsequent chapters:

Stupid problems: These are problems for which a ready and simple solution exists. Rarely is extensive measurement and analysis required, but rather a 5/67 Thinking mindset is sufficient to solve such problems. An example of this problem occurred at a law office when the Managing Partner ignored the plea by the secretaries that they were backlogged at the single printer that they shared. By simply adding a few printers the secretaries and paralegals didn't have to wait for their documents, which increased the output of the lawyers and thus the profitability of the law by over \$2 million annually. That was a stupid problem.

Difficult problems: These are the problems that are simply not easy to solve. Most every project team has insufficient expertise, insight, and knowledge to fully solve a difficult problem at the onset. Difficult problems are best solved through decomposition and an incremental, 5/67 Thinking approach wherein project team members learn, gain insights, and develop new approaches through the successive iterations of problem solving. The NASA initiative to put a man on the moon by the end of 1969 is an example of how to properly solve a difficult problem through incremental problem solving after decomposing the problem into manageable, independent phases.

Wicked Problems: These are the pinnacle of problems to tackle. Wicked Problems simply are not susceptible to ordinary problem solving techniques and, more than likely, the problem solvers have never dealt with such a problem before. Further, Wicked Problems are exemplified by one particularly unpleasant attribute - most approaches to tackling the problem simply make the problem worse. Long-standing

corporate inefficiencies, government policies towards welfare, foreign policy, and healthcare, the War on Drugs, homelessness, and many other problems fall into this category. Solving these problems demands accepting that we don't know enough to solve the entire problem straight away. So commencing with careful measurement and analysis is required to avoid making the problem worse. A minimum resource expenditure with an iterative approach to making progress is the only way to achieve success. We regard the Werner von Braun rocket development team after World War II as an example of how to properly solve a Wicked Problem. That team did intense analysis, developed tests, failed, learned, and repeated. They started off with well documented, unpleasant failures, but ultimately succeeded in developing very reliable lift systems that took Mercury, Gemini, and Apollo missions into space. And, they managed to avoid many of the awful side effects of a poor approach to a Wicked Problem such as killing themselves, creating really bad publicity, losing their funding, and so forth.

Craig and Leonard continue to explain and detail their 5/67 approach to problem solving, but leave us with a key take away before Chapter 1: ***...we have learned over and over that is it OK to be wrong...***

Whether our problems are stupid, difficult, or Wicked, most can be solved with proper research, discussion, testing, and review. Humpreys and Bertain "5/67" is an evolutionary approach to the 80/20 Principle, which is an extension of the Pareto Principle, named after Italian economist, Vilfredo Pareto, who in 1906, found that 80% of the land in Italy was owned by 20% of the population.

Control those things you can, and keep the surprises to a minimum!