Why? Because!

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This is the fourth article (there is one more) written in response to the NCEES Forum on "The Future of Surveying." All five articles are posted at www.globalcogo.com/future.html.

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In March 2016 Bill Hazelton recommended the following U-tube TED video as providing guidance with regard to discussing the Future of Surveying. The point made in the video is quite valid and various forum participants agreed that answering the "Why?" question is a tough one. May I suggest that the simple answer is "because." It seems that any parent of a curious 4-6 year old child recognizes that a series of "why" questions can become very frustrating. As a last resort (or sooner) the answer is "because I said so."

https://www.youtube.com/watch?feature=player_embedded&v=u4ZoJKF_VuA

Forgive me for injecting a bit of levity into our discussion but sometimes I think we take things and each other too seriously. On the other hand, the topic being discussed is serious and very important! Separating the wheat from the chaff can be a tedious exercise and some choose not to do it. But, for those really interested in making progress, diligence and tedium is a price that needs to be paid to find that diamond-in-the-rough.

If any of the following can be used to improve insight as to the "why" or to make progress in realizing a collective vision for the future of surveying, then it can and should be considered. If my suggestions turn out to be chaff, so be it. At least I'll be able to look back and say, "I tried."

Last fall I received an announcement from ABET asking for proposals for presentations to the 2016 ABET Symposium to be held April 14-15th in Hollywood/Fort Lauderdale, FL. In glancing through the announcement, I noticed an item that caught my attention – Disruption and Innovation. I saw that as an opportunity to step outside the box and instigate discussion of much needed improvements in educational practices and accreditation processes (especially as related to surveying education). I read the proposal specifications carefully and my enthusiasm was dampened by criteria that seemed to define a rather small "box." But, I submitted a proposal with a faint hope that my proposal would be accepted. The title of my proposal was, "Expanding our 2-D mind-set to accommodate/exploit 3-D digital spatial data." As might be expected, my proposal pushed the idea that there are benefits to be realized if/as we (society, professions, and educators) view spatial data in light of the digital revolution.

My proposal was not accepted with the statement, "The author appears to be arguing for a specific method of data analysis but does not represent how this would be applied to accreditation, engineering curricula, or the role of technical education . . ." I replied that I understood the "misfit" and admitted that my proposal was probably premature. In my opinion, the topic is timely, disruptive, and critical in the practice arena. I believe that accreditation policies will eventually need to address those challenges.

That feedback from ABET came about the same time as the ASCE Surveying & Geomatics Division EXCOM was discussing who could/should represent ASCE at the NCEES Forum on "The Future of

Surveying." I was reluctant to be considered because the NCEES criteria specified that attendees would be expected to promote organizational policies as opposed to interjecting personal viewpoints. As much as I revere policies and practices of ASCE, stifling my personal views would not be possible for me. I was delighted that the Chair of the Division Education Committee attended the Forum to represent the ASCE Utility Engineering & Surveying Institute (UESI). None-the-less, I went ahead and wrote up the "Disruptive Innovation" item. My intent was to have the item printed in the New Mexico Professional Surveyors (NMPS) Newsletter, the Benchmarks. But, before submitting it to the Benchmarks Editor, I sent it for review to a colleague who happened to be President Elect of American Association for Geodetic Surveying (AAGS). After reading same, he encouraged me to send it to NCEES as well as to the NMPS Benchmarks. He also asked if I would attend the NCEES Forum representing AAGS. I did all three.

Following the forum, I provided a summary of my participation to AAGS and submitted the same summary to the NMPS Benchmarks. The first article on Disruptive Innovation appears in the January 2016 issue of the NMPS Benchmarks (http://www.globalcogo.com/DisruptiveInnovation.pdf). A summary (http://www.globalcogo.com/FutureNCEES.pdf) of my participation at the forum appears in the March 2016 issue of the NMPS Benchmarks. Please note in the Summary that I attempt to state clearly that the views expressed are mine alone and should not be interpreted as being the position of AAGS. As a follow-up to discussion on the NCEES Basecamp web site, I prepared another item suggesting specific steps that could be included in (http://www.globalcogo.com/NCEESWayForward.pdf) a Way Forward – see Benchmarks May 2016 issue. Here again, I note that my views do not necessarily reflect those of AAGS. However, the intent of this missive is to lend credibility to the ideas being promoted as being in the best interest of the Future of Surveying. Maybe they are, maybe they are not. I believe that discussing and evaluating a variety of ideas is an important function of the NCEES Forum.

Before we go back to the 2016 ABET Symposium, recall another video posted by Bill Hazelton on March 3rd (https://youtu.be/C30bJBcM_0c) in which the suggestion was made that surveying is boring and that what we really need to do is build capacity. I responded in support of that video and posted the 'Way Forward' item to Basecamp. Now, back to ABET. I am not complaining that ABET did not accept my proposal for a "forward looking" presentation, but I find it ironic that two speakers at the Symposium are "looking backward" focused on unintended consequences of "what went wrong." Yes, we can all learn from them because hindsight is better than foresight. I believe that in each case the individuals had "built capacity" and were competently "doing their job." Each will certainly contribute to the success of the 2016 ABET Symposium. The following biographical information was taken from the ABET web site.

- "Marc Edwards was part of a team that helped bring Flint's problems with lead, leaks, and legionella to the world's attention after sampling in Flint homes starting in April 2015."

- "In 2012, Arvind Thiruvengadam's lab at West Virginia University was excited to be testing emission levels on a few diesel cars. They hoped at least three people would read the research."

My point is that unintended consequences need to be discussed and considered carefully. I believe that ABET, NCEES, and many professional organizations, while they may be good at "process," need to devote more attention to content – see http://www.globalcogo.com/content.pdf . As a dramatic example, I happened on an item the Obituaries of the March 27, 2016 issue of the New York Times see - http://www.globalcogo.com/Orings.pdf. It seems that Bob Ebeling was a Morton Thiokol engineer who insisted that the O-rings on the Challenger would fail in cold weather. The article states that Mr. Ebeling

never recovered from the disaster. How tragic! Now, I am not Mr. Ebeling and the consequences of ignoring the impact of working with 3-D digital spatial data (to my knowledge) will not cause loss of life, but the parallel is uncanny! Building capacity and acting responsibly (as apparently did the two ABET speakers) is absolutely essential.