

Keynote Address: Project Management: Chickens, Goats, and Kids

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The world is changing, but Margie Hlava is ready for it.

In fact, she began adapting to change long ago as a “farm girl from Wisconsin,” a deceptively simple moniker that belies the intense determination and fortitude that characterize her youth as well as her decades-long career as a project manager and renowned information scientist. Those who attended her keynote address at the CSE Annual Meeting in Columbus were offered a glimpse into her life and her extensive career and walked away with several pearls for navigating the increasingly convoluted—and risk-laden—ways in which we procure, distribute, and receive information.

Hlava began by regaling her audience with a series of endearing photographs and reminiscences that reflected a quintessential rural upbringing. Yet woven inextricably into this nostalgia were the hard-earned, invaluable life lessons that would prepare her for challenges she would face in her professional life, including—to name just a few—resilience (as when she moved 18 times before the 2nd grade); responsibility (as when she completed homework on the bus because there were chores to do at home); tenacity (as when she battled formidable weeds in the fields); and perseverance (as when her family collected food during the summers to survive the winters). These lessons proved particularly useful in 1985 when, while overseeing a data salvage and delivery mission for the Chemical Abstracts Service (which had lost 12 years’ worth of abstract tapes), Hlava and her team were confronted by no less than an earthquake in Mexico, a hurricane in Jamaica, and a massive political protest in the Philippines—yet in the end, the project was delivered on time, under budget, and at the promised accuracy level.

In solving “The Case of the Missing Abstracts,” Hlava acquired additional wisdom that would serve her well in the many ventures and projects that followed. The tenets of good organization and planning, meticulous categorization and classification, strong inventory control, and verification

(and double-verification) of data accuracy were critical to the success of an 11-year business partnership with VINITI (a subsidiary of the All Union Institute for Scientific and Technical Information) and a contract with the Iron Mountain Repository to digitize all 5.4 million US patents, yet many of the greatest challenges were still to come. The world is in the midst of what many are calling “The Fourth Industrial Revolution,” an age of technological advancement that is fraught with risks, pitfalls, and machinations that prompt trepidation and require extreme caution—but among the myriad things to fear about our current trajectory (including phone addiction, cyberterrorists, and information overload), Hlava placed artificial intelligence (AI) at the top of the list.

AI is becoming increasingly prevalent in countless industries, and in each case Hlava warned that there are substantial (and often multiple) risks inherent in the implementation and application of AI software. Insufficient training, incomplete and/or inaccurate data, and unsecured data are certainly recipes for disaster—and beyond that, biased models (which can lead to discriminatory outcomes), performance degradation (which can impact a software’s long-term viability), regulatory noncompliance, and unethical use can all have a drastic impact on the efficacy of software programs that incorporate AI technology. Amidst all of this, there are the inevitable human-machine interface failures, some of which are more disconcerting than others.

One such failure is evident in the disturbing trend of search system manipulation, where online search systems are being “tricked” to control the information users receive. In such cases, Hlava said, system algorithms are personalized to each user’s search history so that the information a given user receives is based on opinions they already hold, a lifestyle they already live, and conclusions they’ve already made. Inspired by a Google search comparison in which a conservative individual and a liberal individual received markedly different results for the relatively broad search term “Egypt,” Hlava conducted a similar experiment with her staff, asking them to search for “Egypt” on their work computers as well as their home computers—and again, each search yielded completely different results, having been tailored to each staff member’s online activity. This phenomenon was never more apparent than in the 2016 US election cycle,

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in which people's views and opinions were firmly set by the social media threads they followed, and Hlava warned that the 2020 election will likely see an even more extreme manifestation of this tactic now that it has proven effective.

In the end, it is the care that we take with AI technology that will prove most critical. Citing a multimillion-dollar health records project at The MD Anderson Cancer Center that was ultimately abandoned due to poor project management, Hlava said that projects of this scale must be considered, designed, and managed carefully depending on the mechanism—particularly because with AI, one must consider what's safe versus what's unsafe and what's predictable versus what's unpredictable. Yet even after following a sound progression of creating, enriching, and structuring content to make it "smarter," Hlava stressed that the job is not complete: the content must then be followed to discern how content owners are responding and to identify the directions in which content consumers are headed.

In offering her vision of the future, Hlava cited Bill Gates, saying that "we're doing business at the speed of thought" and "technology isn't quite done with us yet." In order to keep up with rapidly changing trends and identify growth opportunities, scientific publishers—who until recently have been "hunters and gatherers," according to Hlava—must be more systematic in order to make their data more findable and trustworthy so that their readers can replicate a previous search and add new findings to the results. Additionally, challenging old assumptions will be a key component for success. Our unprecedented access to data will only increase, and the media through which they are accessed will make an increasing amount of difference.

In closing, Hlava at once encapsulated her talk, her career, and her outlook on life by framing a daunting prospect in an optimistic light: "The future's in our hands, and I think it will be a fun one." Technology may not be finished with us yet—but on the bright side, the Margie Hlavas of the world aren't done with technology.