

Environmental LAW

Environmental consulting evolving through technology

One of the benefits of practicing environmental law is the opportunity to work with and learn from environmental scientists and professionals, both in and outside government. For the past 20 years, I have enjoyed the privilege of being the master of ceremonies/moderator of the annual environmental learning conference co-sponsored by the Genesee Finger Lakes Chapter of the Air & Waste Management Association and the Genesee Valley Chapter of the New York Water Environment Association. This conference began modestly, but has succeeded in becoming a premier event, attracting more than 250 attendees from across the state and preeminent speakers from across the nation to Monroe County, on what is inevitably a cold and often snowy day in February.

This year's conference, held on Feb. 13, was no exception. On a cold February day, a packed house heard exceptional speakers — who came from as far away as warm and sunny San Diego to Rochester — give thoughtful and thought-provoking presentations on how innovation and technology are transforming the environmental professions and our ability to deal with environmental problems.

At a time when some have decried environmental science and tried to marginalize scientists as part of “fake news,” this year's conference provided a refreshing reaffirmation that science and technology, coupled with the courage to be innovative, can be illuminating, transforma-



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and profitable.

From conceptualizing how environmental scientists and engineers can adapt themselves and their organizations to integrate ever-changing technologies on an ongoing basis, to providing case studies offering specific examples highlighting how evolving technologies can alter our perspective and provide solutions to complex environmental problems, the presentations offered a fascinating window into how any business can adapt and respond to changes in technology.

On the plane of organizational theory, Jamie Newton from OBG provided insight into how to change an organization's internal culture and to make acceptance of innovation and change an exciting and valued part of the corporate culture. Equally important, he offered concrete examples of how OBG is working to make that culture apparent to the outside world. OBG encourages employees to present new ideas by providing a process for these ideas to be evaluated, tested and put into practice. It also sponsors and encourages “think tank” competitions hosted at universities and offers paid think-tank internships, which raise the company's profile as a place where innovative thinking is welcome.

Ben Chandler presented specific examples from Haley & Aldrich on how environmental professionals can adapt and profit from technology that is incremental and logically evolutionary or that is disruptive and a radical departure from past practice, and meets with internal and external resistance. Beginning with quotes (that are amusing, in retrospect) from famous individuals predicting that transformative innovations in their respective fields would fail miserably (such as a famous producer's certainty that “television won't last”), Mr. Chandler highlighted the transformation in perspective and data gathering that is resulting from the use of drones. Relatively cheap but reliable data gathered from drones is improving and enhancing mapping of all kinds, and it is giving a competitive edge to those who have embraced the technology.

Disruptive technologies that challenge established methods of addressing a problem predictably have a harder time gaining acceptance. That lesson was demonstrated through a case study about an innovation in water treatment technology using synthetic resin. Although the technology was a departure from its established methods, OBG did not reject the technology, but allowed it to develop as a separate business which has become profitable and successful.

Denice Nelson from ERM offered perspective on a byproduct of evolving technology: how to absorb, manage and actually use the data being created. This is

a daunting task for any business, as she posited that 90% of the world's data has been created in the past two years (as an example, in the time required to read this column several hundred hours of video — including many hours about cats — has been uploaded to YouTube). She offered specific examples describing how real-time data can be created and managed to improve groundwater monitoring and excavation tracking for purposes of remediation and compliance.

Dr. Thomas Trabold, from the Golisano Institute for Sustainability at RIT, offered a perspective on how technology can be applied to the problem of managing food waste, but can become embroiled in controversy. In the United States, we generate more than 63 million tons of food waste annually and spend more than \$218 billion to deal with it, primarily by putting the waste in landfills. There are techno-

logical solutions, one of which is to create an energy source — gas — through anaerobic digestion. There are several anaerobic digesters currently at work in Western New York. However, digesters produce a residual waste, called digestate, which has become problematic. Researchers have found that a heating process can transform the digestate into a product dubbed “biochar,” which can be used as a soil nutrient. The process reduces the original waste mass by 98%.

Together the speakers presented a dynamic demonstration of an industry in transition. They offered a glimpse of emerging technologies and automated, cost-effective ways of generating, receiving, organizing and presenting data in ways that were not possible only a few years ago.

The anticipated benefits for consumers of environmental services are sig-

nificant. With the data these new capabilities can provide, environmental consultants will be better able to identify trends, evaluate conditions and optimize the client's commitment of resources.

Of course, to make these new capabilities truly payoff, regulatory agencies need to adapt at the same pace — no easy task for a public entity. To realize the potential benefits, regulators need to adapt their policies and add the capability to accommodate ever larger datasets and real-time information and learn to use the information, even if it challenges conventional wisdom.

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