From cloud security to VR, area experts unlock potential of existing technologies

by Michelle Leach

Public-private partnerships are helping to overcome IT talent challenges, while the likes of evolving cloud platforms and virtual reality technologies are clearing infrastructure- and cost-related hurdles for many organizations.

"The internet of things (IoT) promise has come to a new mass market: the connected home," said Mike Adams, director of sales for U.S. Cellular in Nebraska and Iowa. "In the span of a few short years, connected devices have entered the homes of millions of Americans.

Wasner

"We now have connected lightbulbs, connected scales, connected thermostats, connected refrigerators, connected pet dishes, connected grills and connected toasters."

Citing online market research platform Statista, Adams said the worldwide smart home market is forecasted to grow with affordable IoT devices — from $15.6 billion in 2016 to $43 billion in 2020.

"This year, drones have gone beyond recreational use with many business sectors being early adopters of drone technology," he said, referencing agriculture, oil and gas, and mining and surveying. "It is expected that more businesses will use the technology to simplify their operations."

While VR has been around for many years, Adams said it's found a place in the market.

"From virtual meetings to tourism and health care, VR has the potential to impact the business world in the immediate future," he said; for example, architects make complex drawings in 3-D, medical students shadow a surgeon regardless of where they are, Realtors take potential buyers through virtual tours. "The money savings VR can bring to these business sectors will be substantial."

First National Technology Solutions President Kim Whittaker and Chief Technology Officer Ralph Wasner spoke to how partners such as Metropolitan Utilities District are leveraging cloud resources, with Whittaker noting the primary benefit being cost savings, as companies avoid the large capital investment of refreshing hardware now and in the future when the end of its shelf-life is reached. She notes the cloud as evolving from infrastructure and software as a service (Saas), to platform as a service (PaaS), allowing clients to develop applications directly on the platform, without requirements to use virtual servers to run applications.

While Wasner said the next generation is not going to be "radically new," a number of untouched areas are possible with current tech.

"In the near future, hosting anything locally or as a segregated application stack will become a thing of the past," he said. "Virtual farms that move application hosting to a salesforce approach are the next big thing.

"Why host an application when you can let someone else own the pain of updating it, when you can just pay for what you consume?"

"The other area of potential growth is adding fog computing to cloud technology for the management of internet of things (IoT) devices," Wasner said. "The fog, which extends the cloud to devices that produce data, consumes less time and bandwidth."

Nebraska Applied Research Institute's Terry Reinert, director of cybersecurity research, underscored the importance of a secure environment, as buildings get smarter and data and networks are moved to the cloud. He and his team focus on applied R&D, hands on training and data analytics services in the "cybersystem domain," primarily building controls/smart grid/IoT devices.

"We're bringing in the world-class cybersecurity professionals who have worked in the government and security industry ... **Continued on next page.**

Mike Adams, director of sales for Nebraska and Iowa at U.S. Cellular.

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and at the same time we're building pipelines with multiple universities," he said, referring to Midwestern expansion. "We're not only bringing the people in who have the experience; we're cultivating cybersecurity talent in this area."

In this manner, organizations don't have to "look at Silicon Valley and DC" to build whatever tools they need.

President Manny Quevedo and his team at enterprise software provider OpsCompass understand these challenges firsthand; they are partnering with NARI on, partly, cloud monitoring controls for cybersecurity and compliance within the Microsoft Azure Cloud.

"The key here is the cloud brings so many advantages," Quevedo said. "There are concerns about control and security.

"We can turn to folks like Terry and his team, to have him with us to ... build total solutions."

Quevedo also underscored the rapid "timescale"; how one must ramp up quickly to meet demand. With the shortage of talent in some areas, he indicated, there is anxiety for individuals who are developing in the field.