WIRELESS COMMUNICATIONS IN RURAL AREAS

In many rural farming communities across America, wireless internet connectivity is a luxury. Absence of quality connectivity directly affects the adoption of new agricultural technologies, many of which require high-speed wireless connectivity to provide producers with accurate, real-time analytics. The current environment of spotty wireless internet connectivity in some rural areas negatively affects innovation and entrepreneurship in agriculture.

In interviews with Nebraska farmers about internet-based technology, of the two farmers provided opposing views on connectivity. One young farmer said he avoids using precision agriculture technologies that run on wireless connectivity because his rural area lacks reliable service. He even talked about how little he uses his cell phone because of its poor service, an unexpected response from a member of the millennial generation.

In contrast, a more experienced farmer said he refused to accept the bad service in his area. This farmer paid his communications company to install fiber optic cables out to his farm to boost his connectivity, so he can take advantage of up-and-coming agricultural technologies.

TYPES OF COMMUNICATIONS TELEMETRY

▸ GPS and satellites – do not require cellular service, but can be expensive to use and have restrictions for image resolution
▸ Cellular data service – same networks cellphones use, convenient for user, often has poor connectivity in rural areas
▸ LoRa – a secure, standardized low power wide area network with good connectivity in rural areas

BENEFITS OF INTERNET CONNECTIVITY

▸ Provides capability to use advanced technology on the farm
▸ Greater internet access in rural areas could inspire agricultural technology innovations

CHALLENGES

▸ Large capital investment is needed to provide rural areas with reliable internet connectivity
▸ Poor connectivity discourages adoption of agricultural technology

OTHER INFORMATION

▸ Both public and private entities are working together to provide funding and solutions.