Government Executive Media Group

MarkLogic

# DoD, IC and NGOs Can Now Maintain Connections—Even Lost Ones

## Stay connected, even when you aren't.

To say the internet has changed the information-gathering landscape would be a gross understatement. Thanks to networks of connected applications, intelligence officers can send and receive crucial field information to and from their respective headquarters.

However, for all the innovative capabilities that internet-enabled technologies have provided, the underlying fundamental infrastructure can be easily forgotten:  we believe we can always stay connected to the internet via Wi-Fi, cellular or satellite, but sometimes we aren't.

"Technology has evolved under the assumption of a constant internet connection," MarkLogic Chief Technology Officer Idriss Mekrez says. "But when you apply that assumption to real-life situations, it all breaks down."

Although cellular towers and Wi-Fi connections are springing up across the globe and multiplying rapidly, the connections they provide are often the first to be lost when an environment falls under siege, either by nature or by an adversary. This becomes a problem for the FEMA field operative during a natural disaster, the soldier on a foreign battlefield and the intelligence officer gathering information abroad.

Mekrez says that the increasing reliance on cloud technology, though beneficial at large, complicates this issue even further. For example, picture a FEMA agent making an assessment of a hurricane-stricken area. Because of dropped internet connections, agents may not be able to access important, cloud-stored information from their agency or, conversely, send critical observations made onsite. In areas of spotty connectivity, they may revert to notes on paper. When they return to a reliable connection—their hotel, perhaps—they'll have to input data manually, a dull and laborious task that delays information even further and opens up a wide margin for human error.

Mekrez explains that federal clients using MarkLogic's enterprise NoSQL database can effectively keep their forward-deployed teams connected and productive, even when that connection is intermittently interrupted or even just painfully slow.  All the agencies' data silos are unified and accessible from the data center to field laptops.

Rather than disrupt the flow of information in either direction, solutions built on MarkLogic follow a very simple path of reason: if a connection is detected, information is pushed via uploads from the device and downloads from headquarters without being prompted to do so. When the connection drops, so does the

loading—until a new connection is established. Nothing gets lost in between.

“Field workers can continue to collect notes and observations seamlessly in a completely disconnected mode,” Mekrez says. “As soon as they’re back online, their observations and documents are uploaded with no data loss.”

This technology will become increasingly important, Mekrez expects, and not just in environmental catastrophes.

Both on faraway battlefields and in cyberspace, adversaries are using methods of various levels of sophistication against U.S. military forces—everything from jamming Wi-Fi signals to complex cyber-attacks. Government and military systems operating in these environments should be prepared for the inevitability of losing connectivity. The seconds it takes to manually reconnect to a lost signal—a task that can be automated using MarkLogic—are vital, and they can mean the difference between mission success and failure.

Mekrez says one defense agency has already successfully implemented MarkLogic on laptops and uses it to synchronize information collected during global operations. It’s a proven capability that can be implemented today, he says, so government agencies have nothing to lose.

“Being disconnected is a burning problem,” he says, “and we have a solution that supports natural disasters, the battlefield of the future, and anyone looking for operations resiliency.”