Portable Connectivity for Business Continuity

Presented by

Plum Laboratories, LLC™

FOR MORE INFORMATION CONTACT

BRIDGEWAY SOLUTIONS

800-333-3608 BRIDGEWAYID.COM

Table of Contents

Executive Overview	Page 3
The Value of Connectivity	Page 4
Portable Connectivity Approach	Page 5
Use Cases	Page 6
In-Vehicle versus Portable Connectivity	Page 7
Conclusions	Page 7

Executive Overview

Internet access is no longer just a facet of our professional lives. It has become the lifeblood of our professional lives. An individual or organization that is without internet access is effectively invisible to most of the world.

But often, we find ourselves unable to connect to the internet, either because we are in a remote location where we cannot get a usable cellular signal, or because of a disruption such as a power outage. We may also find that in particular venues, such as at a hotel or conference center, we cannot access high speed data if access is available at all.

Most of the solutions that are designed to provide internet access in these situations are typically either inexpensive but ineffective, such as wireless access cards and dongles; or expensive and not given to data transmission such as satellite phones.

However new enabling technologies for business continuity are coming to market that overcome the limitations of the smaller solutions, and cost much less to acquire and operate than satellite based technologies.

This paper outlines the need for affordable portable connectivity and the economic implications of lost internet access. It also presents the economic and technological advantages of recently developed, long-range, portable cellular devices that can provide high-speed internet access to an individual or an enterprise.

The Value of Connectivity

As our dependence on internet connectivity has increased, numerous studies have been done to assess the real cost of unplanned outages and lack of internet access. Different types of private sector and public sector organizations have varying levels of dependency on internet access, but the impacts of unplanned outages are significant in both sectors.

According to ***Industry Week,*** "IT downtime costs businesses, collectively, more than 127 million person-hours per year—or an average of 545 person-hours per company—in employee productivity." (*IT Downtime Carries a High Pricetag*)

"On average, businesses lose between $84,000 and $108,000 (US) for every hour of IT system downtime, according to estimates from studies and surveys performed by IT industry analyst firms. In addition, financial services, telecommunications, manufacturing and energy lead the list of industries with a high rate of revenue loss during IT downtime. (*Assessing the Financial Impact of Downtime" –* ***Business Computing World***)

According to **Dunn & Bradstreet,** 59% of Fortune 500 companies experience a minimum of 1.6 hours of downtime per week. To put this in perspective, assume that an average Fortune 500 company has 10,000 employees who are paid an average of $56 per hour, including benefits ($40 per hour salary + $16 per hour in benefits). Just the labor component of downtime costs for such a company would be $896,000 weekly, which translates into more than $46 million per year.

While the financial impact of these hard costs are staggering, these are not the only losses suffered by organizations during unplanned outages. Lost e-commerce revenue, negative impact on brand, increased customer dissatisfaction, and damage to employee morale, are hard-to-quantify, but real soft, costs.

While many corporate headquarters and government offices are equipped with backup generators to manage power outages, not all of them have equipment in place to provide high-speed internet access to replace disruptions in their wired internet service. In addition, remote offices, teams, and individuals are typically not provisioned with technology to provide alternative path internet access if their primary internet connections are disrupted.

Perhaps more importantly, when the preservation of life is highly influenced by the ability to communicate, having adequate voice and data communications is critical.

Portable Connectivity Approach to Business Continuity

Up to now, most of the technology available to provide alternative path, high-speed internet access in case of disruptions have been expensive, cumbersome, and complicated. Organizations would need to install failover generators, satellite-based internet access, and other equipment

Recently major breakthroughs in antenna design, improvements in portable power supplies, and the ability to molecularly bond cellular, wireless, and GPS antennas inside a portable case have given rise to a new enabling technology for continuity of connectivity. Completely self-contained, self-powered, portable cellular access devices that are now available at affordable prices to maintain internet access over cellular networks even if the user is at extreme distance from cellular towers.

The “Network in a Box” concept has been around a long time. But most implementations of previous generations of portable, wireless, internet networks promised much, but delivered poor performance. Users were often required to connect external antennas and power supplies, and then configure the network to allow access and optimize the signal.

However, new antenna arrays have been developed that have the capability of capturing cellular signals from towers from distances far in excess of what is normally experienced by the end user. In extensive field trials, users have been extremely impressed with the distances of cell signal acquisition normally thought impossible. Moreover, if the closest towers are overloaded or down, these antennas reach out to towers further away until they have a signal capable of delivering high-speed internet access for both voice and data.

Many of these arrays operate in MU-MIMO, (Multiple User, Multiple Input, Multiple Output) which allow them to split data between multiple towers or carriers for speeds that rival or even exceed wired internet connections.

However, taking advantage of these antenna arrays for truly dependable, reliable internet access required another technological breakthrough. To deliver a completely self-contained high-speed wireless internet solution, Plum Laboratories™ developed a process to molecularly bond cellular, wireless, and GPS antennas directly to the interior of a ruggedized case.

By bonding the antennas, and optimizing the configuration of placement, wiring, shielding, and support for all the components, many of these solutions can be dropped from a height of sixty feet or more with no damage. The power bank included inside the case can power the network between 24 to 72 hours or more depending on data usage and include ports to recharge smartphones, tablets and laptops.

This all-in-one configuration can easily be utilized by any employee, with virtually no training. They simply attached the lead to the power bank, flip on the power switch, and within five minutes, they have access to one to four, secure wireless networks capable of supporting 32 to 256 simultaneous users depending on the model.

Once the networks are active, the users simply enter their network password one time, and they are connected. They can close the case and drive to another location if desired.

Use Cases

Consider the applicability of this type of solution for common operational needs.

Failover

Imagine it is a Monday afternoon. The power goes out or a construction worker inadvertently cuts the fiber connection to the building and suddenly, you have 100 employees roaming about the building with no way to work. You open up the portable connection device, plug in the power bank, and turn it on. If they are all on laptops, with their applications and documents on their devices or available in the cloud; in five minutes they are all back to work and productive.

Remote Access

Social workers, remote healthcare providers, job site managers, insurance adjusters, construction workers, salespeople, and many other workers often find themselves in remote locations where cellular signals are not available. They need access to mission critical data to be productive. Smaller, highly portable, and cost-effective models of these internet access devices that can keep them connected far outside the normal range of wireless cards and dongles.

Event and Incident Management

Organizations that run off-site events for employees or customers are often forced to pay the event venue exorbitant rates to provide internet access to their attendees. In many cases, the throughput of these systems slows dramatically as more and more users log onto them. With a portable connectivity device, the organization can provide far faster download and upload speeds to the users without having to pay the venue for access.

Cybersecurity

Another advantage of the portable connectivity device is improved cybersecurity for remote teams and individuals. Since they carry their own extremely secure networks with them, they never have to log onto client or public networks. This greatly reduces the risk of them being affected by malware and other cybersecurity risks; or worst yet, inadvertently affecting a client's network.

In-Vehicle Versus Portable Connectivity

Organizations with large fleets of vehicles must make another decision about how to deploy cellular wireless internet access to support their mobile workers. If their workers usually operate inside or near their vehicles, it might appear that in-vehicle installation of these systems would be more cost-effective than provisioning them with self-contained systems. The vehicle's electrical system will power the cellular gateway and the vehicle can be equipped with larger antennas.

But this approach requires that every vehicle in the fleet have a cellular gateway installed, as well as a data plan for each vehicle from a cellular carrier. In addition, only a small percentage of the fleet may be operating in remote areas without cellular service at any given time. For example, a local law enforcement agency might have 50 vehicles, but only 5 would be operating in areas without cellular coverage.

Typical installation cost of an in-vehicle cellular gateway and antenna costs about $2,100 per vehicle. A monthly data plan for each vehicle would add $30 or more per month per vehicle. So the equipment cost for a fleet with 50 vehicles would be $105,000. Assuming a data plan with a rate of $30 per month per vehicle adds $18,000 per year. Therefore, the total cost for that fifty vehicle fleet would be $123,000 for the first year.

By choosing to purchase five portable wireless systems with an average acquisition cost of $6,500 and the same $30 data plan per system, the acquisition cost is only $32,500 and the data plan to support them would only be $1,800. The workers would check out cases when they know they will operate in the remote areas.

First year savings with the portable versus in vehicle approach would be $$87,700 and annually they would save $16,200 for the data contracts.

This approach has several other compelling advantages. The portable units can be taken inside a facility to provide in-building internet access during an outage. Hard to do with a vehicle. In addition, the worker can take the in-case solution into his hotel room if traveling and utilize it to work productively.

Conclusions

Organizations can no longer afford the productivity and revenue losses caused by outages of internet access. Mobile workers and remote teams also suffer productivity loss if they cannot securely connect to the internet.

New technological advances in antenna design, improved batteries, and the ability to molecularly bond cellular, wireless, and GPS antennas inside a portable case have given rise to a new enabling technology for continuity of connectivity. Completely self-contained, self-powered, portable cellular access devices that are now available at affordable prices to maintain internet access over cellular networks even if the user is at extreme distance from cellular towers.

These devices offer organizations a cost-efficient way to manage temporary internet outages as well as equip mobile workers and teams with simple to use enabling technology for continuity of communications.

For more information on these self-contained, self-powered solutions, visit www.plumlaboratories.com

Plum Laboratories, LLC,
3 Memorial Drive Suite 208,
Springfield, TN, 37172,
(855) 537-9990
www.plumlaboratories.com