Improving the Reliability & Performance of POS Systems

A Cybera White Paper
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The Point-of-Sale (POS) system is the lifeblood of a business. In today’s electronic payment world, any POS downtime or slow performance can translate into lost sales and/or frustrated customers. Many retailers struggle with keeping their existing POS systems operating consistently or improving the speed of their transactions.

With the emerging trend of mobile payment, retailers may wonder how they can adopt mobile payment technology while struggling to keep their core POS system operating efficiently. Retailers have a lot riding on their POS systems. They must also maintain PCI compliance or face even greater costs in the form of daily penalties. How does a retailer improve their current POS system performance while not jeopardizing their PCI compliance?

Cybera ONE can help.

Common POS Performance Issues
The most common issues retailers face with their POS systems include connectivity outages, slow transaction speeds, support and software upgrade downtime, technician dispatch expenses, and costly connectivity systems. Each of these problems have challenged retailers for years and account for countless frustrations and costs.

- **Connectivity Outages** – Whether a store POS system uses VSAT, dedicated analog business lines or broadband, outages do occur. VSAT is typically dedicated to POS because of its limited bandwidth, and it is subject to bad weather and coordinated fraud. Analog business lines tend to be more reliable than broadband, but the costs are higher. All of these connections are not redundant and are subject to any number of potential failures that are completely out of retailer’s control. Cable cuts, power outages, heavy storms or just equipment failure can render a store stranded and unable to process transactions.

- **Slow Transaction Speeds** – Both VSAT and analog lines are high latency services with long associated delays in transaction processing. Average transaction times can range from 10 seconds to 30 seconds or longer. These delays leave valuable customers fretting if their card is going to be denied, or frustrated while they wait. Slow transactions delay business, create longer lines, and can lead to customers abandoning their purchase. When a business invests heavily in loyalty programs, promotions, and advertising, slow transactions are working against its investments.

- **Support & Software Upgrade Down Time** – If a retailer has purchased a support program for their POS system from a POS vendor, they may have experienced multiple hours of downtime while the vendor support team troubleshoots a problem or upgrades the firmware on the POS system. This disruption is no less impacting than a circuit outage on a business. Depending on the type of connectivity used, the updates can take a long time due to the limited bandwidth of analog lines and VSAT.

- **Technician Dispatch Expenses** – Quite frequently problems cannot be fixed remotely in a timely manner, therefore the POS vendor will dispatch a technician known as a “truck roll” to work on-site in hopes of minimizing downtime. Each truck roll is estimated to cost the POS vendor somewhere in the range of $400 to $585 in fully loaded costs. As a result, the POS vendor typically charges the retail site a $150 dispatch fee in order to recoup some of those costs, even if it has a support
plan. Given that each retail site averages two dispatches a year, these costs can become quite significant.

- **Expensive Connectivity Costs** - Many retailers use dedicated analog business lines for their POS systems because they are fairly reliable, but having a dedicated line that cannot be used for other purposes is expensive. VSAT connections range from $85 to $150 for a 128Kbps connection, while analog lines range from $45 to $80 with all associated taxes and fees. Some retailers have migrated their POS systems to broadband connections in order to reduce these dedicated costs, but this requires the purchase of a broadband capable POS system which can be expensive.

**Improving POS Performance**
Cybera has worked with retailers on improving the security and reliability of their POS systems for over 12 years, and through detailed analysis of the aforementioned issues developed its innovative Cybera ONE secure application platform. Cybera ONE migrates retailers’ payment card traffic onto a secure and redundant high-speed network, and deploys innovative applications that reduce downtime and enable POS vendors to securely access systems remotely for high-speed support.

Tri Star Energy adopted the Cybera ONE solution for all of its 150 convenience stores because of its security and reliability. Scotty Creason, IT Director of Tri Star Energy, calls Cybera ONE a “game changer” because of the improved performance, reduced downtime and lower costs it has provided to all Tri Star Energy’s stores. Cybera ONE became a game changer for Tri Star Energy by enabling the following advancements.

- **Secure Use of Public Broadband** – Cybera ONE provides a secure overlay network that does not use the public IP address, rendering the Cybera ONE network virtually invisible to hackers. Payments travel over an encrypted connection to the Cybera ONE Secure Core which is a nationwide MPLS backbone connecting multiple secure data centers. Payments are then cleared with Tri Star Energy’s card processor of choice through a secure processor gateway. This unique architecture allows Tri Star Energy to fully embrace the benefits of public broadband without the security risks.

- **Integrated Wireless Back-Up** – Cybera One provides an integrated 3G/4G wireless back-up functionality which maintains a persistent VPN as a failover route in the event the public broadband fails. The use of two completely diverse connections provides both a cost effective and highly reliable approach to improving the availability of Tri Star Energy’s POS systems and other Cybera ONE enabled applications such as Loyalty, HotSpot, Tank Monitoring, IP Safe and Remote POS Support. VSAT, analog lines and even broadband as a stand-alone service could not provide the reliability offered by Cybera ONE. Cybera ONE allows for the customization of failover times based on the customer’s preference, providing complete assurance that Tri Star Energy POS systems stay up and running.

- **Secure Remote Helpdesk Application** – Cybera ONE’s innovative High Speed Remote Helpdesk app enables Tri Star Energy’s POS vendor VeriFone to remotely access their POS system without the addition of a separate network router. This keeps Tri Star Energy’s store network simple, with fewer points of failure and with less cost. In addition, all actions on the Cybera ONE system are logged and maintained on Cybera’s secure servers. Each VeriFone technician that accesses the
store’s system is authenticated and all of his actions are logged, ensuring PCI compliance is maintained. The use of high speed broadband allows the remote technician to access the POS system and conduct trouble shooting or software downloads much faster than on an analog line or VSAT system. It also reduces the need for a truck roll and the resulting $150.00 charge to the store. Cybera ONE allows for improved POS support, with less downtime and reduced costs.

- **Improved Transactions Speeds** – Tri Star Energy’s card processing speeds have improved dramatically as a result of moving onto Cybera ONE. Transactions are completed in two to ten seconds versus the 15 to 30 seconds they previously experienced. Customers complete their purchases rapidly and leave with a sense of satisfaction. Lines at Tri Star’s stores move quickly, and the investments they make into customer Loyalty programs, advertisements and promotions are reinforced by a quality customer experience.

- **Reduced Costs** – The elimination of either the analog business line or, in Tri Star Energy’s case, the VSAT connection reduces the cost of a dedicated stand alone connection that can range in cost from $40.00 to $120.00 is cost justification for the High Speed Remote Helpdesk app. The mitigation of technician call out charges of $150.00 per visit builds further justification of savings. The less tangible costs of downtime and outages are savings, but they are also the realization of revenue that could have been lost. All combined, Tri Star Energy achieved significant benefit in the form of cost reductions, reduced distractions to store personnel, less downtime, and improved revenue realization.

**Cybera ONE Secure Application Architecture**

The Cybera ONE solutions architecture is comprised of five primary elements:

- **SCA-315 Secure Application Appliance** – Cybera’s unique secure application appliance which serves as the primary site router, incorporates multiple other functionalities into a single manageable platform. The SCA-315 also enables Ethernet switch, VPN client, integrated 3G/4G back-up, integrated Wi-Fi HotSpot, and a secure Intel-based Linux server. The SCA-315 does not use a public IP address, and maintains an overlay network that is completely independent of the local public IP address. The SCA-315 can be turned up behind any DSL modem, cable modem or Internet router depending on the type of connectivity to the site.

- **Optimized Broadband Connectivity** – Cybera ONE can accommodate almost any broadband solution available today. The customer can select the highest speed, lowest price or best overall value broadband option, and Cybera ONE will work. Cybera ONE is bandwidth agnostic, allowing for the rightsizing of the broadband options for the site’s needs.
- **Cybera ONE Secure Core** – The Cybera ONE Secure Core is based on an MPLS backbone connecting nationwide secure data centers which enable hosted security services such as firewall, intrusion detection, SEIM, event logging, VPN and content filtering. A variety of customer specific applications can be hosted in the secure core and made available to all sites in the customer network. Secure gateways to payment processors, POS vendors, ERP providers and other strategic partners facilitate always-on secure connectivity for critical applications.

- **SmartView Network Manager** – Cybera ONE’s SmartView network management application provides real-time status of all network connections and alerts clients to critical events within their network. SmartView will proactively notify the retailer if a primary broadband goes down and when wireless back-up is engaged. Following, it will notify the retailer when it reverts back to the primary connectivity. SmartView maintains a log of all actions taken on a network and reviews client logs everyday to maintain a record for verifying this aspect of PCI compliance. SmartView provides a list view or a map view of a network for easy drill down to specific sites.

- **Solutions Management Center** – Cybera’s Solutions Management Center (SMC) provides 24x7 monitoring and management of our clients’ networks and supports the troubleshooting and repair of their network connectivity. Cybera ONE is a fully managed service helping to control the clients’ IT support staff costs. The Cybera SMC works with critical partners such as payment processors and POS vendors to troubleshoot the entire network, not just site connectivity.

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**The Tri Star Energy Solution**

Tri Star Energy utilized a Cybera ONE SCA-315 to connect over different public broadband options at each of its stores to Cybera ONE’s Secure Core. Dedicated VPN pathways connect Tri Star Energy to First Data for payment processing, to Shell for Loyalty on the Fuel Rewards Network, to its corporate offices for site-to-site traffic, and to VeriFone for POS support.

Utilizing a persistent VPN, VeriFone is able to connect to the Tri Star Energy store location and the specific support technician is able to authenticate for access to the POS system. At this point the VeriFone technician is able to conduct multiple remote support tasks including updating firmware to ensure the Tri Star Energy POS system stays in good health. Logs are maintained on all of the technician’s actions on the network and stored in the Cybera ONE Secure Core.

Tri Star is able to access the secured logs through its SmartView web portal access, with all of the other logs of what has happened on its network. These logs are filed away and can be used whenever a PCI audit is requested, and will serve as documentation for Tri Star Energy to demonstrate that its logs have been reviewed every day.

**Savings Analysis**

The business case for adding Cybera’s High Speed Remote Helpdesk app for POS support is self evident. Tri Star saved $46.95 per month at each store, totalling a monthly savings of $7,042.50.

The financial benefit above does not include less-tangible areas that can impact the bottom line such as faster transactions and less downtime. In reality, the company may be saving even more than the stated amount.
<table>
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<th>Cost Category</th>
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<tr>
<td>Cost Elimination</td>
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<td>POS Dedicated Analog Business Line</td>
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<td>Dispatch Costs (Monthly Average)</td>
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<td>Total Savings</td>
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<td>Across 150 Stores</td>
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**Summary**

In summary, Tri Star Energy saw a significant cost saving from being able to consolidate all its critical applications (payment, loyalty, site-to-site VPN and Wi-Fi Hotspot) into a single platform provided by the Cybera ONE solution.

These savings included reduced equipment cost, deployment and integration costs, and overall operating cost across its 150 locations. On an annualized basis, the total savings were estimated to be over $70,000. In addition to the significant cost savings, the Cybera ONE solution also provided a platform for expansion of additional future applications that will continue to help Tri Star improve and expand its business.