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NOC NOC – Who's There?

No one, absolutely no one is there. Today's Network Operation Centers (NOCs) data systems for tower site management are functional for the NOC, but marginally useful to customer. The NOC's collect their monthly fee and in the better examples, give limited internet access to site information and a list of open NOTAMs or site issues. Are NOCs necessary? Of course they are. Facilities with twenty four hour a day human presence to monitor and react to situations ranging from trivial to critical at our nations communication infrastructure is essential. Can it be more efficiently and yield greater benefits, yes it can.

The short falls are multi fold and costly to everyone. The typical field service cycle has the NOC sensing a site issue and contacting the customer. The customer evaluates the situation and contacts a repair vendor. Then the customer and the NOC sit around and wait until a service technician calls the NOC for either an Access Ticket #, request a Quarterly Light Inspection or submits NOTAM closeout information. The NOC usually does not know what vendor has been is assigned to the open ticket. Typically, hopefully, the customer keeps track of that. Sometimes the customer keeps track of open issues in a spreadsheet or maybe in a purchase order system. When the technician calls in and closes the NOTAM, customer receives an invoice and everyone is happy, for a while.

Then the site has another NOTAM opened within a week. Now the witch hunt starts. Customer asks the NOC what is wrong now. Without the NOC having detailed monitoring of the site, they really don't know what is wrong. Customer calls the vendor to go back to the site. Depending on the historical data the vendor keeps, the service technician may or may not have detailed records of what was worked on, what corrective action was taken and what replacements parts were installed to correct the last issue. All the technician knows is that tier one beacon two is out and needs bulbs. He fixes it and calls the NOC to close the NOTAM. A couple of weeks later the customer gets the invoice, pays for the service and everyone is happy again.

So what is the problem? Suppose the issue was faulty bulbs and because the customer does not keep track of or have access to detailed historical repair records they are paying for a service that could possibly be warranty work. We can assume the technician has to document and communicate his work hours and parts consumed to his home office, so the data is recorded somewhere, somehow by someone. So the most important information for the

customer is being stored by their service provider and it may or may not be available in detail or electronical form. To make matters worse, if you are a larger tower portfolio manager, the detailed data is being stored by not one, but across your various vendors that provide site services.

Imagine being responsible for 500 towers with vendors for air conditioning, diesel generators, lawn maintenance, fence maintenance and obstruction lighting and you cannot put your fingers on critical site management information. At best, you have to search thru invoices, hand written field service notes, maybe your emails or whatever information you have and piece together an audit trail of what happened over the last three months 300 miles away from you.

A better approach is to have a data management system that efficiently collected service information and provided access to the appropriate data to the customer, the NOC and the service technician. In today's market place, the technician records his activity and parts consumed in some fashion, but how he records it, to who he communicates it to and to what level of detail, is as wide open as the wild west. The NOC is in a prime position to host and communicate a large portion of field activity information. While parts used and service notes may be appropriate for the NOC to collect and pass along to the site owner, field expenses such as mileage, per diem, material and hotel costs are not.

This is where applying some technology and keeping an open mind will serve everyone. Some of today's NOCs were developed and run by hardware vendors with the underlying objective of keeping their foot in the door with the customer. Offering enhanced monitoring of sites equipped with their hardware and adequate monitoring of sites with hardware from other vendors. The objective being that as lighting systems age out, they will be replaced with their proprietary solution. While a sellable marketing strategy to upper management within the lighting company it will never happen in the world of tower portfolio owner. Many times the assets are not owned long enough for the systems to age out and it is usually less expensive to patch and sell, than to upgrade and standardize. The tower portfolio manager is responsible for hundreds of towers with various technologies (obstruction lighting, HVAC, etc.), manufacturers, models, monitors, NOCs, and service vendors.

The NOC needs to expand the data maintained for a site to include the customers contact information for the person responsible for the site and the vendor assigned the job. The technician should be provided a modern digital tool, potentially a phone app and \ or laptop application that efficiently collects images, service activity description and parts used information. Service data should include specifically what unit was serviced and what components were replaced. This data, collected once, could then be transmitted to the NOC for NOTAM closeout, the technicians' home office for integration into applications like QuickBooks and possibly directly to the customer for merging into corporate data systems.

The monitoring industry is at a unique point in time. The opportunity to increase market share by expanding services by utilizing an open system approach far out weights the potential of controlling market share thru proprietary solutions.

The key to improving overall NOC services while reducing costs is data transmission standards. While need is the mother of invention, competition is the fuel to the fire. Having each NOC venture off and create their version of the perfect customer portal is typical of the free enterprise system. Having laptop application and phone app developers create the ultimate data collection program is expected. Field data collection applications already exist and they are interfaced to various proprietary service tracking applications. What is needed is a standardized format of the data transmission to move the data from the service provider, to the NOC and or tower owner.

Imagine a standard data package that encompasses photographs, site activity verbiage, employee hours, parts used, mileage records, various field expense information being collected and transmitted by the field technician. This data package could be completed to the level of detail required by the customer or end user. The process could be flexible and configurable to enable appropriate data to be transmitted from the technician directly to their home office, the NOC, the customer or all of the above.

Let's look at a short list of the obvious advantages and who benefits.

1. The data standard field activity data package, (FACTPACK), could then be merged into the recipient's data system. The process eliminates duplicate data entry and errors introduced by entering information communicated by phone or handwritten notes.

2. Each recipient benefits by not having to enter the data resulting in a significant human resource cost reduction. Potentially reduces staffing requirement at the NOC.

3. Recipient has access to the data faster, which results in cycle time reduction. Whether it results in closing out the NOTAM quicker, reducing the cycle time to create an invoice or both, it is a benefit.

4. Inventory systems can be updated based on real time usage and parts availability improved. Having the right parts in the right place reduces maintenance costs by resolving field issues on the initial site visit.

5. If a customer transfers a site monitoring to a different NOC, the field service information flow does not stop. It becomes a seamless transition, like changing cell phone carriers. You keep the same phone number; the data just gets routed thru a different network, or in this case, to a different NOC.

6. Regardless of the service provider, the customer receives standardized field activity reports in the form of a standard FACTPACK.

7. The NOC can track open site issues and collect services data provided by different service providers for different types of equipment. Repair information for an obstruction lighting system does not differ much than repair information for a HVAC or

other types of site services.

This is not a new concept. Standard data formats are the backbone of large data systems. The worldwide banking system depends on data standards. I would venture to say most of the readers of this article pay their personal bills via online banking. How do you suppose your bank sends funds to the bank for your electric company or cell phone carrier? They communicate electronically using data standards. Why do we give our employer our bank account and routing number for direct deposit? The payroll company communicates to the banking system via data standards. So why do we not communicate our service information using standards.

Maintenance of our communication infrastructure, whether we are referring to cell towers, broadcast towers, satellite dishes, AC units, diesel generators, obstruction lighting , lawn maintenance, access road maintenance, electrical meter access, site access codes, security systems comprise a significant amount of expense budget. So large, that it justifies a certain level of detailed management at the income and expense sheet level. If you not have access to the detailed data, you cannot manage it.

We can apply the value of data standards to the corporate balance sheet as well. Taking the concept of utilizing data standards a step further, historical service information could be passed between disparate data systems. The value associated can be substantiated when accurate service records are provided. It adds value to an automobile when the service records are provided that prove proper maintenance and documents the cost of ownership. With a data standard, the historical maintenance records could be transferred from NOC to NOC, or NOC to customer, and the integrity of the maintenance records maintained. If accurate service records are provided for all significant site equipment, then a more realistic selling or purchase price can be determined and possibly avoid post sale litigation or balance sheet losses.

This is an opportunity to improve the national communication infrastructure itself, improve airspace safety by closing out NOTAMs faster and reduce overall long term costs by developing and implementing field service data system integration standards. The tower owners should demand it, the NOC and service providers should welcome it.