

## Software Defined Networking

## VOXX International Corporation

**Customer**

- VOXX International Corporation

**Industry**

- Consumer Electronics

**Challenges**

- Costly, inefficient maintenance of closed legacy system
- Costly networking delays with newly acquired companies
- Downtime for contact centers during corporate relocation
- Difficulty moving individual endpoints

**Solution**

- Software Defined Networking (SDN) with PF6800 ProgrammableFlow® Controller
- NEC Model PF5200 Series SDN OpenFlow Switches and Dell S-3148 POE OpenFlow switches
- UNIVERGE SV9300 communications platforms (3)
- Standard UC application licenses

**Results**

- Ease of network deployment, administration, and maintenance
- Scalable SDN up to 8,000 switches, for future growth
- Decreased networking costs across enterprise
- Achieved high availability with SDN solution

**VOXX International Corporation**

VOXX International Corporation (VOXX), has grown into a global leader in many categories of automotive and consumer electronics and accessories, as well as high-end audio products. VOXX is an OEM with an extensive distribution network that includes retailers, mass merchandisers, as well as most of the leading automotive manufacturers in the world, and large domestic automotive OEMs such as General Motors and Ford.

The company's international footprint is evident in Europe, Asia, Mexico and South America where VOXX's growing portfolio currently comprises over 30 brand names; International brands include Klipsch®, Jamo®, Energy®, Mirage®, Mac Audio®, Magnat®, Heco®, Schwaiger®, Oehlbach® and Incaar™. Some of the key VOXX North American brands are: RCA®, Audiovox®, Invision®, Jensen®, Terk®, Acoustic Research®, Advent®, Code Alarm®, Car Connection®, and Prestige®.

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VOXX's International business covers many proprietary products such as market-leading rear-seat infotainment solutions, car security and remote start systems, remote start modules, app-based vehicle security solutions, keyless entry products and innovations like the eFob, satellite radio products, and telematics, among a wide array of well-known audio products and accessories.

The corporate headquarters for VOXX is also a primary location for technical and customer support operations, with contact centers that handle a heavy call load of enquiries from consumers, distributors, and

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technicians alike. Aftersales Shared Services meets these specific call needs with three dedicated call centers: Technical Support, Customer Service, and Product Repair, representatives and managers handle over 600,000 technical calls annually. VOXX data centers are located in New York, Indiana, Florida, and Germany.

## Challenges

The complexity of the management and support of the existing closed legacy system was causing soaring costs. VOXX’s VP of Global IT, Rick Maddia, said, “Some of the challenges of maintaining the legacy systems here at VOXX were inherited from our acquiring other companies; we also picked up their phone systems. As we acquired companies, the efforts to maintain the end-points and switches was costing us time and money and man effort.”

Continued growth through acquisition along with the dynamic nature of their contact centers, often made it necessary to make additions to the network, and to move personnel from one product area to another. This involved the reconfiguring of devices, phones, networks, etc., while trying to maintain business continuity, which was becoming more and more burdensome. Each change meant the painstaking reassigning of switches, protocols, and network QoS, and required advanced planning with Facilities in order for the tasks to be completed within several weeks. Deployment required the need to configure switches individually from several individual switch consoles.

To manage the network also required managing and monitoring all individual switches, and using CLI-based (Command Line interfaces)

legacy troubleshooting tools. These tasks required an IT person with significant networking background, as the legacy system had routing protocols and required the manual configuration of each individual switch (approximately five hours of service time), necessary procedures for also monitoring call traffic, security management, and to set up traffic forwarding paths.

“The NEC solution has provided us with the highest level of availability, with absolutely no downtime.”

Carl Peters, VP of VOXX’ Aftersales Service, had call center concerns about the upcoming corporate relocation to a new facility: “Zero downtime is so important to a call center with high activity levels like ours. Downtime equals a dissatisfied customer. My main concern during a system upgrade was our ability to transition smoothly from the old to the new, and maintain call center productivity. Customer Service call centers are like the ER of a hospital; nobody comes in because they’re feeling great--but the phone system can’t add stress to that situation.”

## Solution

NEC’s Software Defined Networking (SDN) along with UNIVERGE SV9300 communications platform was chosen, together delivering much needed high availability and network flexibility for business communications that are mission critical. The SDN aspects of the VOXX solution allow fully scalable networking and simplicity of system administration, enabling the system to easily adapt to network changes, minimizing the cost and operation of the overall system.

As Rick Maddia explained, “Maintaining all those acquired switches was quite expensive, so when the opportunity presented to move headquarters into a new facility, we took that opportunity to consolidate systems and upgrade to an SDN solution. Software Defined Networking automates and simplifies our network administration, so it would also decrease our maintenance costs.”





Since NEC pioneered the first commercially available SDN solution using OpenFlow protocol, this technology has enabled full network virtualization. This SDN architecture, a network virtualization solution where multiple interconnected switches can be virtualized into a large network and behavior modified with a remote controller, delivers a simplified provisioning and dynamic/on-demand network allocation of VOXX's critical resources. This award-winning networking solution delivers QoS control and dynamic bandwidth allocation, and automatically handles network policy enforcements. NEC's SDN enables greater organizational agility--without the past hassles of costly IT capital expenditure and configuration, ensuring an efficient, high performing, flexible network architecture.

"The SDN technology allows us to grow more quickly and take on acquisitions much easier than before."

Zero-touch network policy provisioning from NEC's ProgrammableFlow® controller (PFC) increases service agility and reduces the network administrative burden. Policy and QoS are automatically applied the second the phone is plugged into a network switch port. Jill Marchese-Buttino, VOXX's Facility Manager, stated, "If we need a phone moved, all we need to do now is move the phone from one work station to another. It's pretty much 'plug and play' here now."

With ProgrammableFlow controllers, the configuration and management of all switches is now from a single management console; the switch is connected to the network, and added to the Virtual Terminal Network (VTN) from the Graphical User Interface (GUI). Administrative personnel with only general IT experience can now identify issues and make changes from a centralized, easy to use GUI. Ms. Buttino affirmed, "From an administrative standpoint, the new NEC system has been much easier and more cost effective for us."

The NEC solution's simple, open networking also enables optimum network scalability--up to 8,000 switches, allowing for the future

enterprise expansion of VOXX International. Mr. Maddia added, "The SDN technology allows us to grow more quickly and take on acquisitions much easier than before. Deploying endpoints is so much faster and simpler; what used to take us months, we can now network within a week."

## Results

With this SDN controlled environment, what was realized at VOXX International was the convergence of Data and Voice. SDN virtualization of the network makes it much easier to deploy devices and also maintain and monitor those devices. Rick Maddia agreed, "The Software Defined Networking gives NEC a real edge—it's a step above, and for us it makes doing business so much easier, with ease of maintenance and administration."

Previously, the company's IT personnel required weeks to provision new resources upon submission of a change request. Currently, with implementation of NEC's SDN solution with zero-touch provisioning and their new UNIVERGE SV9300 platform with GUI end-to-end flow visibility, resources can actually be provisioned the same day. This has dramatically improved operations and system management.

Summing up the relocation issues, Mr. Maddia said, "We were under time constraints in moving personnel and their devices, and had originally budgeted three weeks to move over; NEC's SDN and communications platform enabled us to accomplish that easily within a week."

Contact center concerns were completely abated. Mr. Peters stated, "The move, it was seamless; no complaints whatsoever." VOXX's Facilities





Manager, Ms. Buttino confirmed, “When upgrading to the new SDN solution, we were still completely reliant on being up and running 100% of the time, after all, we are Shared Services; we have every department here, responsible for all locations around the country, and it’s very important to have system access, 24/7. The NEC solution has provided us with the highest level of availability, with absolutely no downtime.”

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VOXX International Corporation now operates with an extremely flexible network they can easily expand, providing the company with a new agility that allows for continued future growth. To date, the flexibility of the SDN solution has allowed six of VOXX’ U.S. locations to be fully and seamlessly networked, which has lowered total costs for the company.

Mr. Maddia confirmed, “We don’t worry about wiring configurations anymore.”

## NEC’s Relationship with Our Customer

Mr. Peters spoke to their close relationship with their NEC partner and VOXX’s entire NEC support team, saying, “The NEC team has really become part of us at VOXX International—we don’t feel they’re a different company, they’re us. They’re always at our beck and call, ready to help us, with no lag time, which works very well for the call center.”

Ms. Buttino added, “During this project, I’ve been nothing but pleased with the entire process. NEC has been available to us whenever we needed them. And the ease of use of the system has been very pleasant; it’s really simplified, and we all enjoy it.

Rick Maddia concluded, “We looked at many other competitors of NEC, but it was really all based on relationships, and NEC delivered. NEC was there for us, whenever we needed them. The success we had with this project is unique for us. We were very pleased that it delivered everything they said it would, and working closely with NEC, we came in under budget and on time, so it was a win for everyone!”

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