Case Study: TMW Systems

Keep On Trucking at the Speed of Voice

How a Transportation Software Provider Transformed its Communications Using 8x8's Cloud Service

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constellation RESEARCH

at a GLANCE

Problem	▪ TMW Systems faced many problems getting its Cisco-based telephony and UC solution to work properly ▪ Call quality was often poor and fixes were costly ▪ Equipment on a long-term capital lease would not run new software versions with updated capabilities
Solution	▪ TMW looked at cloud communications services as a way to simplify IT operations and move to an OPEX rather than CAPEX model ▪ TMW selected 8x8's Virtual Office Pro
Benefits	▪ Much higher call quality along with better internal and external customer service ▪ Lower costs and a shift to consistent OPEX spending ▪ Significantly reduced IT department's telecommunications workload

the COMPANY

Communications is the lifeblood of the commercial freight logistics business. TMW Systems Inc. is one of the global leaders in the industry, providing transportation and logistics software and services to 2,300 customers, including for-hire carriers, dedicated trucking fleets, third-party logistics providers and freight brokers. In addition, the company's software is used by private fleets in the manufacturing, construction, distribution and waste-handling businesses and by several municipal governments.

TMW's customers manage over $71 billion in freight logistics and transportation spending annually, and the company's software directs approximately 510,000 trucks throughout North America, Latin America, Europe, and Australia/New Zealand. TMW Systems is a wholly-owned subsidiary of Trimble Navigation Ltd. (FY2012 revenues of U.S. $2 billion, NASDAQ:TRMB).

Company: TMW Systems Inc.

Headquarters: Cleveland, Ohio

2012 Revenue: $2 billion (parent company)

No. Employees: 500

Industry: Transportation Logistics

Other: Founded in 1983. Eleven branch offices. Subsidiary of Trimble Navigation Ltd. (NASDAQ:TRMB)

the CHALLENGES

Although TMW Systems was a 30-year-old company by 2013, it had experienced rapid growth, both organically and through acquisitions. The company had a Cisco Internet Protocol (IP) telephony solution, financed by a long-term capital lease. This system consisted of centrally located communication manager servers, voice messaging servers, an Instant Messenger/presence server and a Web conferencing server. The remote locations were outfitted with Cisco Survivable Remote Site Telephony (SRST) gateways that provided local calling in the event of a network outage between the remote site and headquarters. To provide high availability, TMW provisioned a diesel generator at the central site that would power the IT and telephony infrastructure should there be an electrical service interruption.

The company was in high-growth mode, acquiring five complementary software companies over six years. Each company brought its own communications system and network which had to be replaced with the Cisco networking gear and telephones in order to get a uniform communications environment. Each location required special configuration of its routers, and a hub-and-spoke multiprotocol label switching (MPLS) network connected the entire system together.

> "No single person on the IT staff understood how it all worked. Not only was there IT complexity, there was also Telco complexity."
>
> Ron Godine,
> Director of IT
> TMW Systems

This system was very complicated. Although TMW had four Cisco-certified IT professionals on its staff, no one fully understood how the entire system worked or how to operate and maintain it. Without telecom specialists, TMW required expensive outside services to provision new users and to make communications service changes. The very act of provisioning required logging into multiple management interfaces just to make a new phone and unified messaging work together.

TMW also reported that it always seemed to have voice quality of service (QoS) problems. It was not that the equipment was defective; it was just that TMW experienced major problems getting all of the elements to all work together correctly. Small changes required router reboots, which sometimes caused other settings to change, which in turn hurt QoS.

Two Events Leading To Change

Two events occurred that caused TMW to reconsider its telephony and messaging infrastructure. The first involved the company's capital lease on the Cisco equipment. After three years of leasing the equipment, TMW discovered that upgrades with new functionality would not run on its existing servers and that the company would not only have to upgrade the software, but it would have to upgrade the hardware as well.

The second event occurred in 2010, when a serious ice storm gripped Cleveland, causing a regional power outage. Under TMW's disaster recovery plan, a generator at

headquarters came online to continue to power the lights and the IT and telephony systems. Unfortunately, after about 10 minutes, a cooling hose broke on the generator: The uninterruptible power supplies slowly discharged, and TMW was without communications for several hours.

Compounding the problem was the configuration of the Cisco SRST gateways at the remote locations. The network between the gateways and headquarters was down. But, only local calls could be made using the SRST gateways, not long distance calls. Without a link between remote sites and headquarters, TMW's entire business operations, in effect, went down. Even those with smartphones on their PCs could not make calls because headquarters, where these smartphones registered for telephony services, was down.

TMW is the first to admit that this systemwide outage was not the fault of the telephony equipment it had, but was caused in part by how the equipment was configured, and in part by the bad luck of a double failure of the regional power grid and the headquarters generator.

A failed disaster recovery capability, coupled with a long-term capital lease that locked TMW into old hardware or an expensive hardware upgrade, caused the company to rethink its communications strategy.

the SOLUTION

In 2011, TMW began looking at cloud-based unified communications (UC) solutions. Cloud solutions seemed compelling because they offered better disaster recover capabilities plus they were clearly, in TMW's view, a bold way to embrace the future. This decision to pursue cloud offerings was made jointly by the CEO, the CFO and the IT director, all of whom knew the risks and all of whom were quite technical.

The first option the company looked at was PingTone. That provider offered to take TMW's existing Cisco communications servers, host them in a PingTone data center, and operate and manage them. Connectivity would still be by dedicated MPLS circuits providing a hub-and-spoke network configuration. TMW ultimately rejected this solution for a number of reasons: It seemed very similar to what TMW already had; the existing Cisco infrastructure was retained; the costs would be more than what TMW was already paying; and it wasn't really a bold step that would move TMW closer to its vision of moving to the cloud.

the TECHNOLOGIES

- 8x8 Virtual Office Pro
- Redundant public Internet connections.
- Polycom phones

Four other solutions - from AT&T, Allworks (PAETEC), Jive and CoreDial - were evaluated but eventually rejected. TMW ultimately chose 8x8's Virtual Office Pro offering.

TMW found that 8x8 was determined, aggressive on making sound business arguments and could provide savings while offering capability improvements. In addition, this solution solved some of the disaster recovery issues TMW was so keen to overcome; 8x8's offering is geographically redundant, meaning that if one 8x8 data center goes down for any reason, the solution continues to function from another data center (8x8's redundant data centers are located in Ashburn, Va. and in Silicon Valley).

The deployment was a little rocky at first. TMW learned that its network infrastructure needed some upgrading in order to provide good QoS. In addition, the company learned that bandwidth control is critical even on the local area network (LAN), and certainly on the wide area network (WAN). The 8x8 executive team was very responsive to TMW's needs, stepping up to help resolve rollout issues.

> "I loved providing the users the tools and flexibility that made them as productive as they could be."
>
> Ron Godine,
> Director of IT
> TMW Systems

The 8x8 solution does not use, nor does it require, MPLS circuits; voice traffic flows over the public Internet. TMW reported that it initially had some problems with call quality, due to outbound Internet bandwidth constraints. These were soon resolved. Furthermore, to provide high availability, TMW deployed redundant Internet connections at each location through different carriers/providers in order to avoid a single point of failure. The main connection is with a Tier 1 Internet Service Provider and the secondary connection is through local DSL or cable connections.

the IMPACT

The year 2011 was a learning and rollout year for TMW. By 2012, there were no remaining issues, and all users, particularly those on the executive team, were very responsive and enthusiastic about the cloud solution based on 8x8's services. Taking the capital lease out of the equation and replacing it with monthly operating expenses has been key to the successful rollout.

> "The 8x8 help desk is like the '12th man' on our IT staff… the level of diagnostics they provide is something we have never had before."
>
> Ron Godine,
> Director of IT
> TMW Systems

8x8's offering also provided some capabilities that TMW did not have with its previous system, such as single number reach, a single voicemail box and softphone capability for everyone[1]. In addition, users had much more control over their own communications and settings through 8x8's Virtual Office Pro portal.

New users are now easy to provision, and adding a new user does not require adding any infrastructure, special licensing or multiple management tool configurations. TMW

[1] The company had unified messaging, but apparently did not purchase Cisco's single number reach capability. Also, TMW referenced Cisco softphone capabilities, but with 8x8, every user received one versus a limited number of users with Cisco's solution.

considers 8x8 "our voice carrier" and has likened the 8x8 help desk to the "12th man"[2] on the staff. Should there be a problematic call, it can be recorded in real time and the 8x8 help desk can triage what happened on the call. The help desk can show step by step, device by device, how the call was routed and pinpoint where issues were that may have caused call quality degradation. In fact, the help desk even detected a problem in a TMW customer's router configuration after it proved, using its diagnostics capabilities, where the problem was located.

the TAKEAWAYS

1. Proper network design is critical for enabling QoS in any IP communications solution, regardless of whether it is premises-based or cloud-based.

2. Even well-conceived disaster recovery plans can go awry. Single point-of-failure systems do have higher risk, and a well-designed cloud-based solution with inherent georedundancy can significantly reduce risk.

3. A high-quality voice solution can be implemented without costly MPLS point-to-point connections. TMW uses the public Internet for all of its voice traffic.

4. Redundant network connections through different carriers is important for ensuring high system uptime.

5. A cloud-based communications solution can significantly reduce the IT overhead required to operate and maintain a unified communications system.

6. Total cost of ownership is not the only criteria to look at when choosing a communications system. Other considerations include georedundancy, the availability of the proper skill set, using an OPEX funding model versus a CAPEX model, reduced complexity, and the current trend of moving non-core IT and telecom solutions to the cloud.

[2] The 12th man refers to a football legacy at Texas A&M University. In 1922, when teams had fewer members than today, injuries shrank the Texas A&M football team to only 11 players. A student came out of the stands, suited up and was ready to play if needed, thus launching one of the richest legacies in college football.

About Constellation Research

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As a result, our research community includes members of boards of directors, C-suite executives, line of business leaders and IT visionaries who are not afraid to challenge the status quo. Most of our clients share a common trait - the passion for learning, innovating and delivering impactful results.

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- Serving over 170 buy-side and sell-side clients around the globe.
- Experienced research team with an average of 21 years of practitioner, management and industry experience.
- Creators of the Constellation Supernova Awards - the industry's first and largest recognition of innovators, pioneers and teams who apply emerging and disruptive technology to drive business value.
- Organizers of the Constellation Connected Enterprise - an innovation summit and best practices knowledge-sharing retreat for business leaders.

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