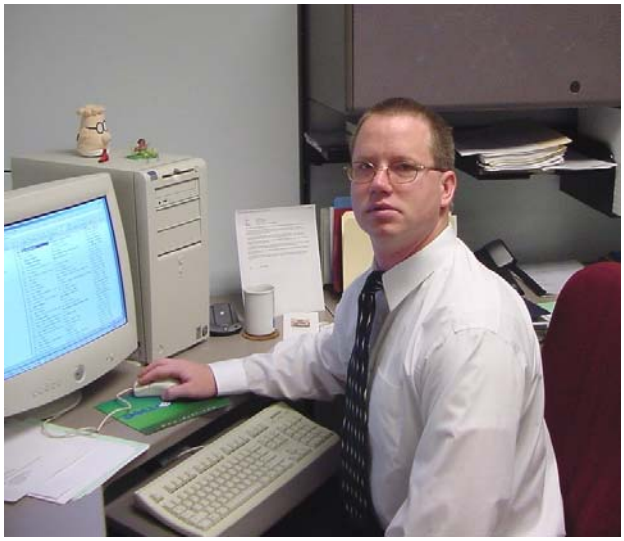
Leading the Way:
Profile of an Early DMS Deployer
Terry Haukom and the Minnesota DOT



When it comes to changeable message signs (CMSs), the Minnesota DOT means business. The agency has one of the largest installations of CMSs in the country. But not all CMSs are created equal. In 1999, MnDOT migrated from a system of rotating drum CMSs using proprietary hardware and software to a new generation of LED CMSs based on open DMS standards. Terry Haukom, Supervisor of Traffic Management Systems Designs at MnDOT, will describe his experiences deploying one of the country's first major fully NTCIP compliant networks of CMSs. He'll also discuss the benefits the MnDOT is realizing from its new generation of signs.

What convinced you to use ITS standards when deploying your DMS devices?

We thought it was important to get in on the ground floor--to work with and develop an understanding of how we could benefit from ITS standards. We knew DMS standards were evolving and that the federal government was encouraging standards. When we first began to look at DMS standards, we already had a mature system of CMSs in place, consisting of around 50 drum signs. So we already had a lot of experience using these devices to manage traffic and we were clear on our objectives for our next generation of CMSs. We also learned from our old fleet of signs. These signs were more or less based on proprietary technology and we wanted to move away from a sole-source pricing arrangement to a more open system with more vendor options.

You have to get out there and kick the tires. Visit sign manufacturers. Look at the signs. Talk to them about NTCIP compliance. Find out what you're buying.

-Terry Haukom

Did you have to convince others in your agency that standards were a good idea?

We were sold on standards from the beginning. However, we also knew it was important to really understand what we were getting ourselves into, so we went on a fact-finding tour. We visited a handful of manufacturers and transportation agencies so we could get a closer look at the technology and how it was being used. At the agencies, we met with both procurement staff and field staff to try to increase our knowledge base of the issues involved with procuring and deploying NTICP-compliant CMSs. We also thought it was really important to visit the manufacturers to look at the physical attributes of different sign types, since design affects maintenance, as well as the performance of the signs in different climates.

What aspects of working with DMS standards were particularly positive or negative?

The signs worked immediately. That was the biggest positive. Of course, we did a lot of legwork that paved the way. We used the NTCIP Exerciser, we made factory acceptance trips to verify the quality of the manufacturing, and we requested in the RFP that the manufacturer come to our facilities to commission the signs. We did a lot before the switch was turned on.

Our negatives were small. We did experience some conflicts between the standards and our management software. Most end users won't run into these problems if they use the sign manufacturer's software. We ran

into problems because the standards weren't as mature, but addendums to the standards have helped us work through these issues.

What parts of the deployment process were simplified by using DMS standards? What parts were complicated or made more difficult?
The standards definitely made it easier. The NTCIP Guide helped us define our requirements in the RFP. On the other hand, understanding something new is never easy, especially when there is nothing for you to go there and look at that's been out for a while.

What was staff's biggest challenge in working with DMS standards? How did your agency address those challenges?
The standards are complicated. There's really no way around it. The DMS standards reference several other ITS standards. We purchased the other standards so we had all the reference materials we needed. This made it easier to write our spec.

Did ITS activities at other regional transportation agencies weigh into your decision to use DMS standards?
Actually, we led the push to use standards. Our RFP was state-based, so we were interested in getting buy-in from districts throughout the state, not just those inside the Twin Cities area. We invited officials from outstate districts [districts outside of the Twin Cities area districts] to help shape the RFP. I thought it was important that officials understood what we're trying to accomplish with our CMSs, and the idea of building on open ITS standards was part of that understanding.

Terry Haukom

- **In his 13th year with MnDOT.**
- **Supervisor of Traffic Management Systems Designs. In charge of DMSs, ramp meters, traffic detection, fiber optic backbone, and hardware CCTV components.**
- **Has completed classes in fiber optic communication, SONET networking, and video hardware and equipment.**

What benefits have you seen from using DMS standards?
We've already seen a 35% savings in our per sign costs because with standards we have more options in terms of vendors and pricing. We also have more flexible maintenance options. We included three years of vendor maintenance in the RFP. After that maintenance period ends, we'll be able to get more competitive bids from more vendors because our system is based on open standards. We're not tied to a single supplier.

Have your received feedback from your customers related to your CMSs?
Comments have been positive for the most part. We get some complaints about the brightness of our signs. Some people have commented that some signs seem too bright or too dim at times, so we're working these issues out. We've also had to consider what kinds of messages we put on our signs. We don't want to bog people down with unessential information. We need to be consistent with our messages and display only information that's important to our drivers.

For your colleagues who might be on the fence about using ITS standards, what is the strongest argument you can think of for using standards sooner rather than later?
In my mind, it boils down to "Pay me now or pay me later." Agencies are always upgrading and growing, going through normal purchasing cycles. The longer you put off standards, the longer you buck the trend. We chose standards because we wanted to build upon a program of success and innovation at MnDOT. We believe standards provide us with a smoother road.

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May 2001

Publication No. FHWA-OP-01-055