The Maintenance Future - MAINTENANCE TECHNOLOGY

Written by Blaine Pardoe, Enterprise Management Systems Friday, 01 December 2000 21:22

Most people know me as a science fiction novelist rather than a maintenance industry expert. As such, I thought a glimpse of the future of maintenance was in order—a glance at a facilities operation in 2012.

Maintenance Manager Mel wakes up and turns on his EU (entertainment unit), a combination of a television, music system, computer, and Internet access rolled into one. As he drinks his first cup of coffee, a streaming download from work appears in the corner of the screen. As he watches the news, he also sees that the third shift has completed preventive maintenance on the HVAC unit in building one.

He also notes that 15 new work orders have come in during the night, most of them generated automatically by the building's systems. The moisture sensors on the fifth floor picked up a small roof leak, accessed the warranty information, and have already forwarded the work order to the roofing contractor. He has already posted that he will be out by noon to start the work. Two airflow sensors picked up a drop in performance in some of the HVAC equipment and have created work orders based on the data and posted job plans based on the probable causes.

Mel marks these for review by the shift supervisor to pick the best course of action.

Before Mel leaves the comfort of his home, he assigns the work orders to the shift supervisors using a Neural Input Device (NID) that he wears on his fingertip. It provides him the capability to use the computer without typing, using his own brain to control the data.

On the way into work he opens a communications link and does a check of his day's calendar and of the current backlog of work. The system has assigned a number of work orders already to his staff. In the car, he makes some last-minute adjustments. The car is tied to an auto-guide program that sets its speed and literally chauffeurs the vehicle to the office with no human intervention. While he finishes that second cup of coffee, Mel pulls down a copy of the Washington Times to check the sports scores from the night before. He is a little old-fashioned, still going to the news sites rather than the direct data feeds from the teams themselves.

At the office, the maintenance team is already on the job. Each is wearing a tiny device

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that holds out a small transparent piece of plastic in front of the eye. The device is fitted with a camera and is lighter than a pair of eyeglasses. On the small square of transparent material, an image is projected showing the details of the work order.

What makes the work order so different from old fashioned ones is that it can play video and audio as part of the instructions, all done by voice command from the wearer. It also is linked directly to the manufacturer of both the parts and the equipment itself, pulling down whatever specifications are necessary as well as the exact manufacturing standards. This information is constantly updated and current because it is stored right at the manufacturer, and includes all parts recalls, known problems from other customers, and their resolutions.

As a worker opens the equipment, he notices some burn marks near the circuit housing. Using the camera in the tiny headset, he zooms in on the image and opens a communications link to the manufacturer. A check of known data does not show any probable causes, so the maintenance worker is directly linked to one of the engineers who designed the unit. He can see the image being broadcast and asks the to remove the panel. Inside he sees a burned out board. Asking the maintenance worker worker to zoom in on the part number, he pulls up a feed to the part's manufacturer. It turns out that a recall was in place on this part. Any damage caused by it is covered by the manufacturer.

An RMA is cut online, while the worker pulls the board and checks inventory to see if there are any others in stock. There is, in a crib across town. He reserves the part and, using the messaging system built into his headset-data feed, asks a runner to go over and pick it up. Using his own finger-worn NID, he updates the work order and includes a video image of the burn marks so if the problem occurs again, no one will have to waste the 15 minutes it took him to track down the problem.

Yes, this sounds like fantasy, but in reality, all this technology exists or is being developed today. NIDs are still in their infancy, but by 2012, they could be reality. The integration of this technology is happening all around us and is in the process of being tested and deployed. The impact on the maintenance operations, as well as the business world as a whole, is not too far away. This passes the era of the smart buildings, and enters the realm of smart departments/companies.

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