

Digital beats paper: Radio-controlled displays in manufacturing



ePaper instead of paper: At the Fujitsu plant in Bavaria, an innovative radio-controlled display solution is cutting costs and optimizing material flows and quality assurance

An employee in manufacturing at the Fujitsu plant in Augsburg requests the goods required for assembling new notebooks. At the factory supermarket, where the components are available on demand, the required goods are loaded onto a number of carts. Small radio-controlled displays on each cart continuously exhibit relevant information such as the product line or the quantity of goods in the work packet. The bar code on the ePaper display is read by means of a hand-held scanner. This process is repeated at various stations until the goods arrive on the production floor ready for the employees – without a single piece of paper to be seen.

The Fujitsu plant in Augsburg produces up to 21,000 units every day, including 12,000 client computing devices such as tablets and laptop computers. The components for manufacturing the desktop PCs, laptop computers and other products are supplied on demand from what is called the “super-market”. “Up until mid-2016, we were using pieces of paper for the transportation carts with details about the relevant order or



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Manager Production Logistics



work packet,” explains Roland Lechner, Manager of Production Logistics. “When we learned of the radio-controlled ePaper displays from LANCOM Systems, we quickly had the idea to replace the paper notes with innovative digital signage.” However, a prerequisite was for the ePaper solution to integrate into the existing network infrastructure and

management system, and for it to be fully mobile for operation in all of the production halls. „For cost reasons, there were to be no changes to the existing infrastructure,” says Daniel Spanfellner, Senior IT Architect, Production.

The network

A total of six WLAN access points were installed – four in the supermarket and two in the production halls – which control the ePaper displays by means of a highly energy-saving wireless technology. The access points provide wireless coverage across the entire area and ensure that the labels mounted on the mobile carts have a steady signal when roaming. “This is where the battery-powered displays really come into their own,” says a convinced Spanfellner.

The labels, which measure just 2.7” across, display the correct information thanks to an interface (API) that links the LANCOM ePaper solution to the customer’s own production planning system. “From the outset, the data flow was to run exclusively via our existing system. This was a success.” The system assigns the displays to work packets. If a fault develops on a cart, the goods together with the label are simply moved to another cart. “Thanks to the ePaper technology, the image resolution is razor sharp,” says Lechner. “We can use different font sizes to display large amounts of information as required.” Along with the bar code (work packet ID) for scanning, the labels show the product family of the goods, the quantity of goods on the cart, the storage lane of the cart, and a time stamp with the date. The bar code is



easily read by the available hand-held scanners. The network was not the only thing to be quickly installed. The displays are easily mounted: A snap-in mounting fixes them to a bar on the cart and they can be removed again at any time, for example for a battery change.

"Here, too, we didn't need any special constructions; we could just use standard bars," says Lechner. When the battery needs changing, the display indicates this automatically. "The displays even presented us with new opportunities in terms of servicing the carts," says Lechner. "For example, the display shows service technicians when the cart needs to be maintained. The relevant information comes directly from our production planning system."



The paperless factory



For Fujitsu, the new displays signal a consistent move away from information in paper form. The company benefits from savings in several ways, such as the cost of the paper, and the fact that there are no printers that need expensive servicing. Also eliminated is the constant changing of the paper notes. "Compared to the displays, where the only thing we need to think about is

changing the battery, the material and personnel costs from printer servicing were far higher," says Lechner.

The strengths of the solution are most obvious when it comes to the flow of materials in manufacturing. When new goods are ordered from the supermarket, carts with the appropriate number of components are formed into a train for transport to the production halls. There, the carts with their goods are delivered to the destination points. "The displays constantly show all of the necessary data and, at the same time, help with the quality assurance of material flows," says Lechner. "If, for example, a component is recalled by the manufacturer, we can suspend the delivery of the goods to the production station with a mouse click." In this case, the bar code is deleted from the display and the reason for revocation is transmitted. "The latest information is displayed at every stage of the process and can be updated almost in real time," Spanfellner adds. "This was impossible with the former paper-based system."

But the potential of the wireless ePaper solution from LANCOM is not restricted to the manufacturing alone. "We have other, quite specific ideas going forward," says Frank L. Blaimberger, Head of Services & Tools. "There are other areas where the displays can be used productively and generate added value. For example, this technology can be used for a more dynamic control over the maintenance intervals of the carts."

The Customer

The Fujitsu Augsburg Plant is one of most advanced production facilities for computers and storage systems in the world, and it is the last remaining PC manufacturing plant in Germany. Along with its research and development departments, it also has laboratories where systems and individual components are developed and tested, also for other companies. This is a meeting place for the unsurpassed engineering services and highest quality demands from Germany and Japan. The hardware products manufactured at this state-of-the-art plant and shipped worldwide include motherboards, personal computers, workstations, notebooks, servers and storage systems. The plant has over 1,500 employees (date: March 31, 2016). Each day sees the manufacture of up to 21,000 units (12,000 client computing devices, 950 server/storage systems, 50 racks and 8,000 system boards), and each week sees the implementation of about 2,500 new configurations and modifications. The production site is a prime example of flexibility, which is why it is also known as the “breathing factory”.

At a glance

The customer



Fujitsu Technology Solutions GmbH (Werk)
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Products and services:

Production of hardware components (motherboards, personal computers, workstations, notebooks, servers and storage systems), in-house research and development

Requirements

- Smooth integration of ePaper solution into the existing network
- Stable roaming of the ePaper displays in the supermarket and the production hall
- Integration of the ePaper Displays data flow in the existing management system

Components deployed:

- 6x Access Points LANCOM L-151E Wireless
- approx. 440 x LANCOM Wireless ePaper Displays 2,7"

