

SAP NetWeaver

magazine



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Baylor College of Medicine Chooses SAP NetWeaver Mobile 7.1 to Heal Inventory Woes

by **Evan J. Albright**, Senior Editor

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Baylor College of Medicine is preparing to open a new hospital facility that will increase its size to about twice its current operations. Such growth means more employees, more square footage, and more patients. It also means more equipment: a new MRI scanner, new ultrasound instruments, a new X-ray laboratory. And each new piece of equipment means more inventory to count.

AT A GLANCE

Baylor College of Medicine

Headquarters: Houston, Texas

Industry: Health Care (non-profit)

Employees: 9,100

Revenue: \$1 billion+

Company details:

- Premiere academic health science center
- Ranked 13th among US medical schools
- Second-largest recipient of federal biological science research grants
- Founded in 1900

SAP solutions:

- SAP ERP 6.0
- SAP NetWeaver Mobile 7.1
- SAP NetWeaver Employee Self Service
- SAP SRM

With affiliations with eight hospitals, laboratories, and other facilities across its organization, Baylor College of Medicine (BCM) has tens of millions of dollars of equipment spread throughout the city of Houston, Texas, in more than 50 different locations — most of it not owned or managed by the college. “But because a lot of this equipment was purchased using federal grant money and donations, the college has an obligation to track it,” says Paul Sammons, analyst and project lead.

Inventory specialists must carefully monitor and report on approximately 10,000 pieces of equipment, each valued at more than \$5,000. When the new hospital, clinic, and associated buildings are fully operational, the equipment that must be inventoried will grow to about 20,000 pieces. Currently, a team of six specialists work full time to collect and update this inventory.

“In 2011, Baylor College of Medicine will open a new hospital that will increase our inventoriable assets by almost double,” says Robin Lee, Executive Director of Administration and Finance. In order to meet this radical increase in inventory, the BCM team needed to come up with a new system to track its many assets. “We wanted to position ourselves so that we would end up with one technology, already understand our system, and be ready to double or nearly double our workload — and hopefully not have to double our staff,” she says.

Because BCM has been an SAP customer for some time, SAP NetWeaver Mobile 7.1 seemed like the ideal solution. Even though SAP had not officially released the solution yet, BCM decided to take a chance and become a ramp-up customer. The BCM team then just needed to figure out how the new technology would change their system for tracking inventory.

Taking Inventory the Old Way

The system the team previously had in place was one where the inventory specialists used handheld scanners that recorded bar codes on each piece of equipment. “The inventory system had an SAP interface program that we developed ourselves,” says Sammons.

“Our scanners were very old, and we were basically just limping along with one or two of them,” says Lee. The application that ran the scanners was almost two decades old and proprietary, and BCM was very dependent on the vendor that owned it.

When the college implemented SAP software in 1999, it developed a program that combined the old system with the SAP software, but this system still wasn’t ideal due to the time-consuming inventory process that was required.

“We patched in from our old inventory interface with the barcode scanners as best we could,” says Lee.

To collect inventory, specialists must travel to wherever the equipment is stored — sometimes at locations hours away. With the previous system, the specialist would read a bar code affixed to each piece of equipment with the outdated handheld scanners, and, at the end of the day, upload the information from the scanner using proprietary software. He or she would then call the SAP operations team, which would load the inventory data into the back-end SAP ERP system in a batch job. From that, BCM could generate a report on the status of the equipment.

Logistically, the workflow was a nightmare. Sometimes inventory specialists had to return three or four times to a location to verify results for a single piece of equipment. “We were looking to improve our efficiency along the lines of getting our inventorying done,” says Sammons. “We were trying to eliminate or reduce as much as possible the number of trips a specialist had to make back to a specific room or building to inventory because of lack of data.”

“We hoped to come up with a system that would provide them information so that they would know what they were scanning and have a little bit of knowledge about its disposition,” Sammons says. In turn, this knowledge would hopefully reduce trips back to the field.

Selecting SAP NetWeaver Mobile 7.1

“We wanted to remain as SAP-centric as possible where we could set up the mobile clients on our own landscape and on our own servers,” says Sammons. “We were looking to minimize extended maintenance costs, upgrades, patches, licenses, and service agreements from third-party vendors. We were trying to keep our mobile inventory solution in house, where we could maintain it with our own IT and SAP services staff — of which, I must say that SAP Services Director Nancy Dillow, SAP Service Manager Jim Williams, and SAP Customer Service Executives Jeremie Colt and Stephen Hulsey provided invaluable support and information throughout the solution selection process, as well as the SAP ramp-up program and licensing. Without their efforts we may have had to settle for a less desirable product.”

BCM just recently upgraded from SAP ERP 5.0 to SAP ERP 6.0. “Having been on SAP software for almost 10 years, you learn that with any third-party add-ons, you have to deal with their upgrades,” says Lee. “It takes a lot of our time to make that as simple as possible and not to have to worry about ensuring that we have the right version of this software to go with our new SAP upgrades.”

After Sammons did some research, he presented his findings to the rest of the team — he believed SAP NetWeaver Mobile 7.1 to be the ideal solution for BCM. Lee also liked what she saw and shared his enthusiasm. “There is no outside software involved in it at all,” she says. “We even print our barcode tags from SAP ERP. This is totally SAP-centric software.”

That being said, the mobile devices that communicate with the system are Microsoft Windows-based. For the scanners, the BCM team selected the Symbol MC70 Enterprise Digital Assistant manufactured by Motorola that runs Microsoft Windows Mobile 5.0. In order for the information stored in the scanners to connect to the back-end data in SAP ERP, BCM needed SAP NetWeaver Mobile 7.1. The only problem was that the software had not been officially released — no one was using it. Because the team had no experience with the software and didn’t know quite where to start, they needed help.

Choosing a Partner

After BCM decided to use SAP NetWeaver Mobile 7.1, the team needed to find a consultant with experience implementing a solution still in the SAP Ramp-Up program. At the time, this task proved simple because very few vendors could deliver the SAP Netweaver Mobile 7.1 product. The BCM team contacted InfoLogix.

“We approached InfoLogix because they were already doing an implementation for a large-scale client, they had good references, and their price was competitive,” says Sammons. “They helped use their influence and experience with a recently completed government product that utilized SAP NetWeaver Mobile 7.1 as well to get us into the ramp-up program. We jumped on that wave and were able to ride it for a little while.”

“I think we were the last customer allowed into the ramp-up program,” he says. “If not for that, we would have had to wait until SAP NetWeaver Mobile 7.1 was released to the public, which would have really upset our timeline.”

InfoLogix’s influence came in handy as BCM navigated its way through the SAP Ramp-Up program. “Understand that SAP has strict guidelines and policies as far as becoming a ramp-up partner and applying for permanent licenses,” says Sammons. “But if you follow their procedures and have a knowledgeable implementation partner, you won’t have any problems in the program or getting a license from them.”



Paul Sammons,
Project Lead

Robin Lee,
Executive Director

For example, while BCM had permission to use SAP NetWeaver Mobile 7.1 in a development environment, it did not have the permanent license from SAP that would allow the company to take the software into production. “We had a bit of a hiccup there, but it was mainly because we didn’t fill out the right form,” Sammons says. “InfoLogix helped to expedite this process so this situation was easily rectified.”

“We wanted to position ourselves so we could double our workload – and not have to double our staff.”

Robin Lee, Executive Director, BCM

Going Mobile

With the new hospital opening on the horizon, the BCM team had a limited window of opportunity to design, build, and implement their new mobile inventory system. From start to finish, it took less than three months. The core team numbered four key individuals, although some 25 to 30 different people worked on the project at some point.

“Our Basis team really came up big for us,” Sammons says. “We were expecting it to take about two weeks to get the landscape built and the SAP NetWeaver Mobile 7.1 software installed at the latest patch level,

but our Basis team, Mingzou Shen, Jason Miles, and Joan King, built us a development box that was up and running in less than a week. This was huge for our timeline, and really got us off to a strong start.”

The project began in spring 2008. “We started blueprinting on June 12, and we scanned our first asset on go-live on September 10,” says Sammons. “We probably could have done a little better than that, but some issues came up” — issues ranging from juggling summer vacation time to recovering from a hurricane. “We had that first scanner in production, and then Hurricane Ike hit,” says Lee. Hurricane Ike slammed into Texas on September 13, taking almost 100 lives and inflicting tens of billions of dollars in damage.

According to Sammons, dealing with the preparation for a category three hurricane and the aftermath set the project back the better part of a week. “The hurricane hit two days after we actually went live, and we had to stop everything to prepare for the arrival,” he says. “We got back to business by September 17, which was when we began getting scans from the specialists on a regular basis.

Tracking Assets with a Scanner

To begin the task of tracking assets with the new system, the inventory specialists turn on their Windows Mobile 5.0-based Motorola MC70 scanners, log into the mobile client, and open the mobile asset tracking application. The opening screen displays a menu that takes the users to the asset entry screen where they enter the location and room number they are working that day. From there, they can select a report to see what assets are in the room, or they can begin scanning bar codes of the assets they find (see the figure to the right).

The scanners hold the entire database of assets required to be inventoried, currently some 10,000 records. For each asset record, there is a description, an inventory number, inventory dates, scan dates, room numbers, building locations, tag location on the asset, and, if necessary, license plate numbers.

Although they are wireless, the scanners do not update SAP ERP in real time. Because the equipment is so spread out across the city limits and the medical center, a few of the buildings where the inventory specialists work do not have access points that allow the mobile devices to connect to the BCM wireless network. Therefore, the specialists need to return to a building that has access to the BCM network to synchronize their wireless devices and update the data in SAP ERP. A wireless connection is not needed to scan — only to sync.

Managing the Data Flow

The mobile device connects to SAP ERP through a middleware tool in SAP NetWeaver Mobile 7.1 called a Data Orchestration Engine (DOE). The DOE manages the flow of data between the mobile device and the SAP back end. “We do a daily delta load and at least two synchronizations a day per device,” says Sammons. “There’s no limit to the number they can do, but a lot of synchronizations would be redundant. You don’t want to synchronize after every scan because you’re just wasting battery power and time.”

The DOE also manages the flow of data into the mobile device. BCM’s scheduled data load is every morning at 6:45 am, which is when SAP ERP automatically pushes back-end data into the DOE. When the inventory specialists arrive at work, they synchronize their mobile devices with the DOE, which pulls the data that was loaded earlier that morning. “At that point, the back end, our DOE middleware, and the handheld device have exactly the same data,” says Sammons.

Taking More Accurate Inventory

So far the SAP NetWeaver Mobile 7.1 architecture is doing everything the BCM team expects of it. After going live, the BCM team only encountered one issue that could be considered significant: one set of rooms had names that were too long, exceeding the eight-character limit, for the corresponding field in the SAP back end — a problem that was easily corrected



The Missing Asset Report helps inventory specialists determine if a piece of equipment was missed during the scan of a particular room or location from the field.

by limiting the input in the room field on the entry screens to eight characters, according to Sammons.

And not only are inventories being taken faster, they are also more accurate. Using the new system, inventory specialists have been locating inventory that was previously written off as missing, damaged, or stolen.

A new feature included in the mobile application is the Missing Asset Report, which provides information that allows a specialist to readily identify equipment that they may have missed in a particular room or location.

Under the old system, specialists couldn't perform this check until they were back at the office, which often required a return trip to correct. However, the inventory specialists at BCM found they can save a great deal of time now that they have the ability to check a location or room, from the field, for equipment that must be scanned before they leave that area.



According to Lee, equipment sometimes disappears, which is obviously a problem for inventory purposes. But that missing equipment isn't always gone for good. Equipment may have been taken by researchers when they transferred to a different office or institution, or it may have broken or been discarded and not reported. However, someone may have reported it as lost, when it actually was moved to another room or into a closet for storage.

“We endured Tropical Storm Allison in 2001, and we had a lot of destruction due to flooding,” says Lee. Many pieces of equipment were lost or thought destroyed, so they were taken off the inventory. “As it turns out, they started popping up,” she says.

Now with the new system, when inventory specialists come across a piece of equipment with a barcode tag that is not in the database, they can enter that information using the Unknown Asset Screen on their handheld device. Then they can send this data to a report, on synchronization, to be investigated. This

functionality alone could mean as much as thousands of dollars in recovered inventory.

Ready for the Next Step

BCM’s inventory specialists had faced the daunting task of using an outdated system to track thousands of pieces of equipment in locations throughout Houston. And with the opening of the new hospital, their job was going to get significantly more challenging. But by moving to SAP NetWeaver Mobile 7.1, the BCM team is now able to inventory its assets more easily and accurately. **NWM**

6 Lessons Learned

✔ **Don’t underestimate scope.** “This project turned out to be a little bigger than I expected,” says Sammons. “It ended up being pretty close to a full-blown implementation.” The reason was not because of the size of the implementation, but the number of touch-points across the organization that SAP NetWeaver Mobile 7.1 reaches. “The number of involved people and touch-points were exactly the same as if we were implementing an SAP solution or module from the get-go.”

✔ **Get programmers on board.** Sammons recommends that, before starting this kind of implementation, make sure you have programmers lined up from the start. “They need to know how the system works and they have to help design the BAPIs because, depending on the business processes, reports may need to verify updates to the SAP back end.” For example, some scans require supervisor approval before the back-end data is actually updated. “Once we had all the required data going to the right place, our programmer, Rick Pearson, was able to develop some really nice reports for us,” he says.

✔ **Do your research.** “First, get a clear understanding of what your needs and expectations are,” Sammons says, and then focus your research on those areas. The BCM team scoured the Internet

for information regarding implementation partners and especially SAP’s own resources. “A good implementation partner is a must,” he says. “InfoLogix provided us with outstanding service and ensured that our project came in on time and under budget. We were incredibly pleased with the results they provided us.”

✔ **Prepare a solid test plan and cases.** BCM’s implementation involved only a handful of users, so training was not a large obstacle. However, using SAP NetWeaver Mobile 7.1 involves a lot of different departments and, in many cases, concepts new to the organization. Because this was a new mobile solution, the test plan and test scenarios had to be developed from scratch. “We had to use our imagination to get it done,” says Sammons. “I think we did a pretty good job with this. We only had one issue that we could have avoided had it been included in a test case” – the restricted characters for room names – which was easily corrected.

✔ **Develop troubleshooting techniques.** Understanding troubleshooting techniques and functionality for the DOE, middleware, device manager, queues, and mobile devices will smooth the post-implementation user experience. According to Sammons, you will almost certainly get errors, especially in your

trace files, and if you understand the equipment and applications you will fix them quickly. “If users can’t synchronize or load their files, you can go into the trace files,” he says. “You don’t have to know everything about the trace files, but if there’s a queue block, knowing basic troubleshooting allows you to help users get their device straightened out as quickly as possible. You don’t have to be an expert, but you do need an understanding of how this thing works.” Another major issue that the team had to troubleshoot involved synching the device with a wireless Internet connection. “Now, our devices are set to automatically log in to the BCM wireless network when the device is turned on or restarted,” he says.

✔ **Include security people early on.** As BCM’s mobile users can update data to the live SAP system, security is a key issue. “Getting your job roles and security set up early and assigned, so you can actually work in the system and test your authorizations and functionality, is really important both from an SAP and a network stand point,” says Sammons. “Our SAP security team, Carolyn Charlton and Craig Weisiger, promptly locked this down for us. You definitely need security there – you don’t want the mobile device to get into the wrong hands.”