

Beyond Barcodes: IT Advances in Retail

EDITORS' NOTE *The world of retail is changing, propelled by advances in technology that have created an array of new opportunities, while at the same time raising complex questions about operational costs and implementation.*

As the deadline approaches for compliance with the groundbreaking Sunrise 2005 electronic-code initiative, LEADERS assembled a group of industry professionals to share their thoughts on the latest developments and their implications for the future of retail.

In the pages that follow, the participants consider the value of information technology in the retail environment, keeping a close eye on the delicate balance between increasing business efficiency and meeting consumer expectations.

As a leading provider in the consumer and retail industry, EDS focuses on a variety of market segments, including food/beverage, apparel/footwear, consumer products, and all retail outlets, including restaurants, mass/department, grocery, drug, convenience, on-line/catalog, and specialty. EDS serves more than 200 consumer and retail industry clients.

EDS Moderator: The charge today is to engage in a discussion about the emerging issues that the new technology Sunrise 2005 is forcing retailers to consider. The Sunrise 2005 initiative will certainly make for some interesting developments. The barcode was introduced as an operational tool to examine inventory, to address stock-keeping issues, and to save labor through automation. The advent of Sunrise 2005 has raised the suggestion that retailers may have to change all of their barcodes. This is just not the case, but it makes for good ink in some of the technology magazines. Sunrise 2005 is actually about the evolution of the barcode's purpose, and, for the first time in the United States, retailers can enrich inventory data in a number of fields. The question at large is: Will there be significant operational changes on the back end? What's the price to pay?

Morrow: In our stores there are lots

of different types of barcodes, from mini-codes to the expanded codes that are found on prepaid phonecards, for instance. So, from an operational standpoint, we're trying to grasp where this is all going and what our strategy and architecture will be three to five years from now in the context of RFID [radio frequency identification]. It's a dual effort for us – examining the moving standard and the potential operational changes. For instance, we came close to using scan-based trading on periodicals, but that required an issue code, which called for different infrastructure in our stores, all the way to the back office.

EDS Moderator: Especially for publications with an expiration date of hours.

Morrow: Right. So we looked at the tops of the trees and didn't jump right into scan-based trading.

Regarding Sunrise 2005, we are taking a snapshot of the whole landscape to figure out where it's going, because it seems that electronic codes are proliferating daily. There's a lot of turbulence. So we know there will be remediation fees, but we still have to get a complete handle on the new proliferation of codes.

EDS Moderator: You raise an interesting question: What is the true spectrum of Sunrise 2005? Sunrise 2005's

PARTICIPANTS

Rob Daly

Director, Consumer Industries and Retail, EDS Corporation, Plano, Texas

Tom Ingram

Director, Merchandise and Logistics, 7-Eleven, Inc., Dallas

Harry Leeper

Director, Information Systems, Corporate Applications, 7-Eleven, Inc., Dallas

Brent Magnuson

Director, Consumer Industries and Retail, EDS Corporation, Plano, Texas

Kip Miles

Vice President, Information Systems, Golfsmith International, Inc., Austin, Texas

Keith Morrow

Vice President, Information Systems, 7-Eleven, Inc., Dallas

David Specht

Senior Vice President and Chief Information Officer, Haggard Clothing Company, Dallas

Becki Walker

Vice President, Application Development, Haggard Clothing Company, Dallas



Daly

Ingram

promise is a clean, established foundation of reliable data that is synchronized and published worldwide. From EDS's industry perspective, that's one benefit for our customers with global breadth.

We've seen some differences among companies complying with Sunrise 2005 in two areas: the timing and the depth of their compliance. Some companies have taken only intermediate steps toward addressing the issue, while others have taken a longer-term institutional approach.

Miles: In our industry, many of our products are not pre-tagged with a manufacturer UPC [universal product code]. For those products, we use an internal system for SKUs [stock keeping units] and barcodes. We haven't seen evidence in our industry that that will change due to Sunrise 2005.

For Golfsmith, our high level of system integration means the migration to a longer UPC requires minimal effort. Our

maximum exposure is temporarily increased labor to re-tag expanded UPC items with our SKUs. We're waiting to see what the big players are going to shake out for us, as opposed to diving in first.

As for RFID, we don't have it on our tactical radar screen for 2004.

EDS Moderator: As a retailer-manufacturer, you are a supplier to yourself in many respects. So you have the ability to apply local part numbers and expand that code, especially within your own stores and data center.

Miles: True. But we still have plenty of room left on the codes we've bought.

EDS Moderator: Exactly. But what if you became a major supplier to Wal-Mart? Would you have to change your behavior as a manufacturer to accommodate that kind of change?

Miles: There would be significant costs for us in handling RFID, along with the relatively minor enhancements for extended barcodes. We would have to examine the ROI [return on investment] of the sales agreement with a retailer of Wal-Mart's size. There would be significant costs involved.

EDS Moderator: Could one retailer, particularly of Wal-Mart's size, warrant that kind of investment?

Specht: As a member of the board of directors of VICS [Voluntary Interindustry Commerce Standards], I get advanced warning when standards are being set. As such, Haggar tends to get its house in

EDS Moderator: At VICS you have some visibility across industries. Are other suppliers preparing themselves?

Specht: The temperature is rising. Haggar was the first company to comply with Sunrise 2005 14-digit GTIN adoption, so we constantly get pulled into industry discussions about compliance and asked questions such as: How did you do it?



—Magnuson

What obstacles did you run up against? Now many of our counterparts are scrambling to comply. I spend a lot of time on the phone talking to other manufacturers regarding our approaches.

EDS Moderator: How many suppliers are prepared to support 7-Eleven's requirements?

reinforced what we in the technology sector have been evangelizing. So everyone knows we have to be on top of our game in this space.

EDS Moderator: When EDS began doing assessments of remediation work for clients, we developed a methodology for assessing the scope and scale of each project because our clients wanted to know about costs. The problem is that answering, "How much will it cost?" is much like answering, "How long is a piece of string?" It's hard to know. Can this be a short-term fix or is it pervasive across an entire enterprise? From an applications point of view, what has been the experience at Haggar?

Walker: At Haggar, we took the opportunity to centralize our UPC code, or the GTIN as we call it now. We have several systems: one for manufacturing, one for customer service, and one for distribution. Each of them had their own UPC, and we were running interfaces between them to keep everyone in sync. Needless to say, that became quite challenging. So we centralized our data and created one file to contain all of the systems. It was a big effort, but it was not too difficult. I equate it to Y2K, because we had to expand the files and recompile everything, but in this case, we also had to create a centralized location.

Daly: Did you have internal product codes before that, or was your system UPC based?



Leeper



Magnuson



Miles



Morrow



Specht



Walker

order pretty quickly. So we have the ability to expand into GTIN [global trade item number] applications. We implement these applications on a customer-by-customer basis, because at Haggar internally, those applications aren't as important as customer satisfaction.

The apparel sector is a little bit different from the hard-goods sector, because it's difficult to apply RFID to a piece of apparel. Furthermore, there's a lot of discussion about whether tags should be applied at the carton level or at the pallet level. But we'll be ready for global data synchronization. It's vital to our survival that we have the ability to go in whichever direction our customers want to go with GTIN or GLN [global location number], and that we comply with the standards set up by organizations like UCCnet [a subsidiary of the Uniform Code Council]. We won't set the precedent; our customers will set the precedent and we'll support them.

Morrow: Most of our major suppliers are prepared to do that, but 7-Eleven is distinct because of our core strategy: Each of our stores is tailored specifically to its neighborhood. So we have thousands and thousands of suppliers. The major household names – the key products present in every store – are certainly prepared, largely because of the Wal-Mart issue. That got them in gear. So it's incumbent upon us to stay in close touch with this evolution, and understand the chasm we're about to cross. We don't want some retailers to reap the benefits that are baked into our cost of goods when we haven't reaped them ourselves.

Magnuson: You all seem to be on the leading edge of data remediation. How do you justify the costs of these efforts? Have your administrative and financial executives been supportive?


Morrow: The call to action came when we had a couple of hiccups that

Walker: All UPC. In apparel, a UPC is for one particular pant in a certain style, color, and size. So you may have one style of pant that has 40 UPCs attached to it. I don't even know how many UPCs we actually own.

EDS Moderator: So Haggar's UPC complexity is found in the variations in a single product. 7-Eleven's issue is the complexity of the product itself. Think how many different products one can purchase at a 7-Eleven store! EDS is involved in a project where questions have come up regarding applying RFID technology to liquids and foil packs. I'm sure those questions apply to products in 7-Eleven stores.

Morrow: Yes, RFID doesn't work on shampoo. We may be at the end of the RFID life cycle, because we never get pallet-sized shipments to a 7-Eleven store. So we are in a fast-follower position, much like Golfsmith. We're ready to take advantage

of this technology, but we won't invest in the R&D needed to create it. We're going to wait and see how it pans out for other people, as they put it on trucks, pallets, and cartons. Contact-less RFID payment alternatives will become more popular too, but we won't be on the front end developing those technologies either.



It could effectively change our whole company, including our visibility and our philosophy.

—Morrow

EDS Moderator: Will there be “smart shelves” at some point?

Morrow: Maybe. There are just so many issues, given the different materials and different packaging of products. RFID works in foil cigarettes and it doesn't work on shampoo. So what does that tell you?

EDS Moderator: I'll let you know when we figure it out.

Miles: To answer the question posed earlier – will this be a short or long transition period? – I think the work will be done faster once the standards are more solidified. In the '90s the battle cry was: “We only have one year to complete what we used to complete in two years.” Today, less than 10 percent of our projects take longer than a year. The majority of business enhancements take less than a month to achieve the desired business value. This is nowhere near a Y2K-level problem, because the majority of supply-chain systems have already been integrated. As an industry, we gained an expertise in integration throughout the '80s and '90s.

EDS Moderator: The Y2K comparison is a great one. The early press around Sunrise 2005 remediation suggested that the process would be even broader because of the pervasiveness of product code throughout enterprises. The only reason companies are even coming close to meeting the Sunrise 2005 deadline is because current abilities have shortened the timelines for these kinds of projects. The automation tools that were developed for Y2K – at EDS we called them PacMen – in combination with nonautomated tools like offshore manual entry, have caused the pace and cost of change to drop radically. The Haggar folks are further ahead of the curve than others, but what is the overall pace of adoption? Do we know yet what we are chasing?

Specht: I don't think we know what we're chasing. I get enormous pressure from our private-label division to be RFID ready, and I have to wonder why. The standards are going to evolve and, if you're on the leading edge, you can spend a lot of time and money needlessly. In my opinion, it's a bit like the VHS-Beta discussion. People made investments on both sides and VHS won. Beta packed up and went home.

There are many issues to be dealt with at the item level, including privacy. I've told our management that we have fundamental block-and-tackle issues to deal with when it comes to making decisions about RFID. When needed, we will have our systems ready, and we'll implement it at a pallet level. Then we'll incrementally move up to the product level, though I don't think we'll ever apply it to individual SKUs. It wouldn't be cost effective. If it cost a nickel a unit, in a low-margin business like ours, that would be very expensive. So I don't think it makes economic sense right now.

EDS Moderator: In five years' time, what will have been learned about the value of RFID?

Morrow: I think it will proliferate as a method of payment, and will deliver a lot more transaction choices for customers.

EDS Moderator: So you envision RFID as a payment mechanism rather than a product-tracking mechanism.

Morrow: Yes, at first. However, within three to five years, I think our friends in the drug industry might use it for tracking controlled substances. Also, additional high-value products like jewelry...

Miles: And golf clubs.

Morrow: And golf clubs might be tracked through RFID. In three to five years, we'll probably be looking back on a lot of mistakes, wasted investments, and struggles for standards.

EDS Moderator: Will those who implement the technology successfully and overcome the struggle have an advantage over those who didn't?

Morrow: Quite possibly. If chips that cost less than a penny were on every product, it would change many aspects of our business – the way we conduct business in the stores and through our distribution centers. It could effectively change our whole company, including our visibility and our philosophy.

EDS Moderator: So the cost of technology would drive that level of ubiquity you're describing?

Morrow: I believe the price would be the tipping point.

Leeper: At five cents per chip, I don't think it will go anywhere. At a tenth of a cent per chip, all of a sudden the whole world would change.

Miles: I think RFID technology could be very useful in distribution centers, even if the price doesn't drop below a nickel. Wouldn't you love to be able to push a

button and, within an hour, know your physical inventory?

Specht: We do cycle counts in our distribution center on a regular basis and our warehouse-management system is so accurate – delivering 99.9 percent accuracy – that it wouldn't make sense for us to implement RFID technology in our warehouses at this point in time; unless, of course, a customer requested it.

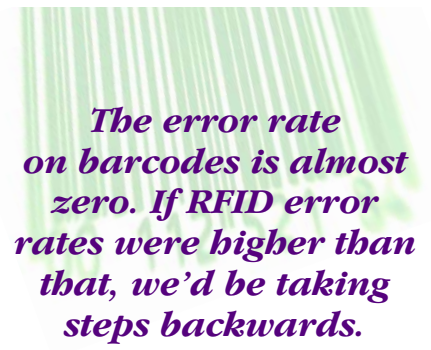
Miles: I think some cool innovations could come about in shipping centers in the next five years as a result of RFID technology. For instance, your warehouse pickers could have a GPS [global positioning system] that picks up on RFID chips. That would make it much easier for them to select the right items quickly. RFID would also enable us to track items through the warehouse and shipping center. I'd know the location of product and where it was going.

Specht: As we move more and more toward the eastern hemisphere, and as we bring in more pre-packs for our large customers, I can see how RFID could help us in scanning inbound items. We would know what items were in a case without even opening it. That would probably produce more accuracy on the receipt, and speed the shipment to the customer.

EDS Moderator: To address another issue, will the storage capacity for this new source of data be an issue?

Leeper: Definitely. How much do you keep? How far do you move it into your downstream systems? What do you do with it?

EDS Moderator: What do you do with data that you're collecting through these means today?



The error rate on barcodes is almost zero. If RFID error rates were higher than that, we'd be taking steps backwards.

—Miles

Leeper: We keep it. We keep too much of it.

Miles: With RFID, it all comes down to one thing: The error rate on barcodes is almost zero. If RFID error rates were higher than that, we'd be taking steps backwards. RFID has to be as dependable as barcodes if we are to rely on it at all. That's a huge “if.” Even if the accuracy rate is 99.99 percent, that still leaves one problem for every 10,000 cases. And how many cases is that a year?

EDS Moderator: Even a year ago, most people didn't think of RFID in the terms they do today. It was thought of in terms of remote tracking and identification. RF [radio frequency] has been around for a long time. RFID is not a new technology, but a new form of RF technology that has been used on sea containers, remote telemetry devices, and gas meters for years.

Today, there is a very different view of what it takes to support data, and the infrastructure needed to move data around. If you capture the data at point of sale, the value of that data comes from moving it efficiently and cost effectively to its point of purpose.

Specht: Although I hadn't thought about this until recently, the anti-terrorism initiative could drive companies like Haggar to adopt RFID technology. We need to get product into the country

The anti-terrorism initiative could drive companies like Haggar to adopt RFID technology.

— *Specht*

seamlessly, and it could make our supply chain more reliable.

EDS Moderator: RFID can also come in handy in combating counterfeiting. If RFID data could be woven into products, their authenticity would be immediately recognizable. The issues related to counterfeiting would change dramatically.

Daly: So what does all this mean for the consumer?

Specht: Obviously, there needs to be a general acceptance if tags are going to be applied at the consumer level. Consumers need to be assured that the RFID technology will deactivate reliably at some point in time. People wouldn't like it if they thought we knew what kind of clothing they were wearing as they walked down the street.

EDS Moderator: These issues are similar to those surrounding the use of credit-card numbers on the Internet. There are people who still won't do it.

Specht: Attitudes change from generation to generation. As an example, my grandfather stashed his valuables and money in boxes around his house, rather than use a bank. He just didn't trust the banking system. It would be ludicrous to even think about doing something like that today.

EDS Moderator: It's risk management.

Specht: Yes, exactly. People need to get comfortable with technology and current processes.

Daly: Do you feel the executive suite is getting more excited about technology?

Magnuson: Companies need a road map to facilitate making capital investments. I think executives are beginning to understand that this is critical to any company's survival.

Morrow: Our CEO, Jim Keyes, has bought heavily into the capabilities of information technology, so we've been investing in technology for many years. We have a lot of people, a lot of physical, brick-and-mortar assets, and a lot of inventory. Jim sees that by having the right technology in place, we get a return on those assets and continue to accelerate returns.

EDS Moderator: How dependent is your business upon technology?

Morrow: Almost completely. We have no back stock in our stores. So if our technology lines were cut and we had to operate manually, we would have product in our stores but we might not have exactly what our customers were there to buy. We have a limited amount of space and SKUs and no back room. So we're heavily reliant on technology.

Ingram: In the summer of 2003, the blackouts in the Northeast of the United States affected refrigeration and other obvious things. However, they also affected our ability to transact and communicate with suppliers. The manual mode we were forced into simply wasn't sustainable.

EDS Moderator: What are the primary challenges in managing, owning, and deploying technology? Is it the rate of change, the cost, or something else?

Morrow: It's about having the right people who are led the right way. We've talked a lot about RFID, but RFID will do nothing unless it's deployed by the right people in the right way with the right motivation.

EDS Moderator: If you demonstrate effective leadership in adopting and leveraging technology, then perhaps you will obtain the results you want. What is your particular perspective on leadership?

Leeper: I had always thought of leadership, in a broad sense, as taking people to where they would not go on their own. However, at a recent leadership conference, I heard a similar yet more refined definition: Leadership is guiding people not to where they want to go, but to where they need to go. That is the difference between leadership and management – the ability to take people to where they need to go.

Specht: I get telephone calls all the time from colleagues who need help with the kinds of projects we have already completed. I cooperate up to the point short of giving up competitive secrets. The word has gotten out, and now Haggar has a reputation for being an innovator and for

being proactive. We're a leader instead of a follower. To quote Mr. H. J. Heinz, founder of the HJ Heinz Company, "We do some common things uncommonly well." I think that's part of what leadership is.

EDS Moderator: 7-Eleven has been described on more than one occasion as a leader in the retail industry. Why is 7-Eleven seen as an industry leader? Is this a good thing?

Morrow: It's the only way I would have it. Simply put, leaders take the lead. They set the pace and the example. They have to step outside their comfort zones and make decisions. At 7-Eleven, leadership also includes involvement with our community and our industry. Furthermore, we teach our people to work with each other as leaders in IT. We have to connect the dots of the organization.

EDS Moderator: Golfsmith is changing the golf-products industry. What is Golfsmith's leadership philosophy?

Miles: It all starts with good values, but how do you define values? At the end of the day, if your mother would be proud of everything that you do, you probably have good values. Good managers execute. Senior managers go beyond execution and prioritize. They know what to do. So what does that leave for a leader? Leaders have good values, they can execute, they can prioritize, but they also set a vision and a strategy for an organization. They convert that vision and strategy into goals that are executable. That's the hard part. Leaders have to see what's coming. A leader knows what's coming and prepares his organization for it.

We aim to grow leaders who can teach, so leadership permeates the entire organization.

— *Ingram*

Ingram: Leadership is about the people and their trust in you. They need to trust you to have integrity and have an interest in their development and their growth. I also think leaders need to be teachers. That's a big theme within 7-Eleven. We aim to grow leaders who can teach, so leadership permeates the entire organization.

EDS Moderator: This group has collectively demonstrated leadership through your willingness to share, without reservation, your thoughts on important issues in the industry. That is a sign of leadership. ●