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# Research Article

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PRI Offices

P.O. Box 158  
Hinsdale, IL 60522 USA  
Phone: 630.481.4976  
[contact@plattretailinstitute.org](mailto:contact@plattretailinstitute.org)

Rather Kirchplatz 11  
40472 Dusseldorf  
Germany  
Phone: [49] 211 59896507  
[frankr@plattretailinstitute.org](mailto:frankr@plattretailinstitute.org)

Ctra de Mig, 75  
08907 L'Hospitalet de Llobregat  
Barcelona, Spain  
Phone: [34] 981847755  
[juanc@plattretailinstitute.org](mailto:juanc@plattretailinstitute.org)

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## RFID Roundtable RFID Challenges and Opportunities

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# About



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Platt Retail Institute (PRI) is an international consulting and research firm that focuses on the use of technology to impact the customer experience. PRI develops marketing and technology deployment strategies, supported by analytics, to build brands and increase sales. PRI clients include retailers, media companies, financial institutions, hardware and software companies, educational institutions, and other businesses. In addition to its global consulting expertise, PRI also publishes the quarterly *Journal of Retail Analytics* and other pioneering industry research.

To learn more about Platt Retail Institute, please visit [www.plattretailinstitute.org](http://www.plattretailinstitute.org).



The Retail Analytics Council (RAC) is the leading organization focused on the study of consumer shopping behavior across retail platforms to provide an understanding of how these impact retailers, particularly as new technologies are introduced. Established in August 2014, RAC is an initiative between Medill's Integrated Marketing Communications department, Northwestern University, and the Platt Retail Institute. The RAC unites industry, faculty, students, and its Advisory Board members for the study and exchange of ideas.

To learn more about the Retail Analytics Council, please visit [rac.medill.northwestern.edu](http://rac.medill.northwestern.edu).

# Sponsor

## About SML

The logo for SML consists of the letters 'SML' in a white, bold, sans-serif font, centered within a solid red rectangular background.

**BRANDING. TECHNOLOGY. SOLUTIONS.**

SML is the leading end-to-end RFID Solution Provider and a trusted partner to top retailers and fashion brands around the globe. SML technology and solutions are behind some of the most compelling retail RFID ROIs. Retailers using SML technology and solutions achieve accurate inventory, increased sales, reduced inventory, and enable effective omni-channel models to better serve customers. SML has a global footprint and offers full-service solutions, including a broad spectrum of certified RFID labels and tags, RFID encoding technology and solutions, in-store and supply chain inventory solutions, and consulting services.

To learn more about SML, please visit [www.sml-rfid.com](http://www.sml-rfid.com).

# Supporting Organization

## About the Council of Supply Chain Management Professionals



Since 1963, the Council of Supply Chain Management Professionals (CSCMP) has been the leading worldwide professional association dedicated to education, research, and the advancement of the supply chain management profession. With more than 8,500 members globally, representing business, government, and academia from 62 countries, CSCMP members are the leading practitioners and authorities in the fields of logistics and supply chain management.

To learn more about CSCMP, please visit [www.cscmp.org](http://www.cscmp.org).

# Introduction

## RFID Opportunities and Challenges

By Dean Frew, CTO & SVP RFID Solutions, SML Group

There are few technologies being applied to retail that can positively impact so many elements of the retail enterprise as RFID. As more and more retailers use the technology to achieve a new level of customer service and inventory utilization, the growing list of business cases from these brave adopters is extremely compelling. It is important to remember that many in the retail industry are still managing inventory the same way as they did 30 years ago. Thirty years ago, there was no internet. While technology has changed the industry significantly, most retailers still manage inventory with a SKU barcode and with manual counting. RFID (non-line of sight) and item-level (serialized) technology enable a new era in retailing, "Retail 3.0." The resultant new retail technology market, which has RFID at its core, is only approximately 8 percent penetrated (end of 2016). This will be the biggest change in how inventory is managed for the next 30 years – starting in apparel and footwear, and rapidly moving into sporting goods, cosmetics, and high value/perishable consumer packaged goods.

One of the key findings from all the business case studies is that retailers are finding that their current inventory accuracy is woefully inadequate to support the demands of the new consumer. Often, accuracy is below 70 percent at the assortment level. Consumers are demanding an unprecedented level of inventory responsiveness from their retailers. Scenarios like one-hour response time to buy online and pick up in-store, or browsing online to check if an item is available at a nearby store, requires inventory accuracy greater than 98 percent. Retailers are also driving this change by the need to utilize inventory across the entire estate to fulfill customer orders. Retailers have documented that by using RFID solutions, sales lift of between 3 and 10 percent is achievable, inventory reduction of 5 to 10 percent is possible, and costly third-party inventory audits can be eliminated. When one adds some of the omni-channel benefits that will be publicly documented in 2017, the ROI that a retailer experiences from investing in RFID is measured in months, not years, and results in a "decluttering" of the inventory management function for a retailer.

Retailers that have deployed in a simple, straightforward way – using proven technology, leveraging RFID source tagging, and integrating with existing systems and processes – have quickly reaped the most benefits. While there is a lot of emerging technology on the market, the tags, readers, and software that exist today perform quite sufficiently to generate great returns for retailers and benefits for consumers.

# RFID Roundtable

**R** FID technology provides unprecedented visibility into the location of retail merchandise and, therefore, provides benefits that may include: reduced inventory requirements, enhanced omni-channel fulfillment, positively influence sales, improve customer satisfaction, reduce markdowns and labor costs, as well as improve supply chain coordination. This roundtable discussion focused on retail application and adoption of Radio Frequency Identification (RFID) tags. The conversation coincided with the release of a 15-month study of RFID, which presented an extensive amount of primary data provided by Macy's, recently published by PRI and the Retail Analytics Council. [Read](#) the PRI Working Paper "Quantifiable Benefits and Analytic Applications of RFID Data."

Eight panelists were asked to respond to a series of questions. Generally, the questions explored the participants' thoughts on the opportunities and challenges of RFID technology.

Roundtable participants included:



Rick Blasgen  
President & COO  
Council of Supply  
Chain Management  
Professionals



Roger Kibbe  
Senior Director, Global  
Customer Experience and  
Logistics Technology  
Strategy  
Gap, Inc.



Andrea Farris  
Vice President, Director  
of Retail Systems and  
Operations  
Walgreens



Ned McCauley  
Director, Store Performance  
Solutions  
Tyco



Michael Jacobs  
Chief Technology Officer  
J.Crew



Tom Schuetz  
Chief Information Officer  
hhgregg



**Venkatesh Shankar**  
Professor and Coleman  
Chair in Marketing and  
Director of Research,  
Center for Retailing Studies  
Texas A&M University



**Eric Spiel**  
Executive Vice President  
and Chief Financial Officer  
Modell's Sporting Goods

Steven Keith Platt, Director and Research Fellow, Platt Retail Institute, and Director of Research, Retail Analytics Council (RAC), Northwestern University moderated the roundtable discussion. Platt began by asking the participants to introduce themselves.

**Rick Blasgen:** I'm with the Council of Supply Chain Management Professionals. My background includes 25 years in the food industry with Nabisco and then Kraft Foods and Conagra Foods, all in supply chain positions. The Council is a professional association, not a trade association. We provide a lot of education. We are membership-driven and very volunteer-driven. Our goal is to connect, educate, and develop the world's supply chain professionals. We have local groups called Roundtables that are like chapters, and we host conferences all around the world including certification programs, education, and the like.

This conversation brings me back home to when I was the leader of the Grocery Manufacturers of America Logistics Committee. That was back when RFID was started and we were there to develop the business case for manufacturers for RFID.

**Eric Spiel:** I'm the CFO for Modell's Sporting Goods. I have been here seven years and have spent 30 years in retail and wholesale companies prior to that. We're a 127-year-old, east coast, fourth-generation, privately held company. We are just starting our RFID journey.

**Ned McCauley:** I'm the Director of Store Performance Solutions at Tyco. I've been working in the RFID solutions business for about five years, and have worked with lots of tier one retailers including the one highlighted in PRI's research. I think we're in the first inning of a great RFID evolution.

**Roger Kibbe:** I oversee omni-channel and logistics technology strategy for Gap, Inc. I've been here 13 years, and I have more than 20 years experience, primarily in e-business and retail.

**Venkatesh Shankar:** I am a professor of marketing and director of research at the Center for Retail Studies at Texas A&M Mays Business School. My research spans the whole gamut of topics in the retail space, ranging from omni-channel, to mobile, to the Internet of Things (IOT). I also study AI (artificial intelligence), VR (virtual reality), and AR (augmented reality). My connection with RFID goes way back. When it was first introduced, I was a visiting professor at MIT. I did write an article in the *Supply Chain Management Review* about RFID and since then I've been tracking that progress.

**Tom Schuetz:** I'm the CIO for hhgregg and have 30 years of retail IT experience.

**Andrea Farris:** I am VP for Retail Systems and Operations at Walgreens. I have been in retail for 20 years, 14 of those in management consulting with Accenture, and the last six years at Walgreens. I currently oversee our inventory management and supply chain teams and recently took over new store technology and innovation for Walgreens.

**Michael Jacobs:** I'm new both to the Council (RAC) as well as my new role at J.Crew. I just celebrated about 90 days here as the Chief Technology Officer.

**Platt:** Eric, you are piloting an RFID project you started toward the end of the year. Maybe you can talk about some of the major benefits associated with the technology, and why Modell's decided to pilot RFID.

**Spiel:** The business case for us is really around replenishment, inventory, and how inaccurate, after 12 months, our actual versus our perpetual records are. Our accuracy is below 60 percent and is a fairly wide range by category in-store when we measure the SKU level at the end of the year.

We were looking at various solutions and RFID certainly seems to be the one that many are going after. We are a seller of branded goods; we're not vertical. A major disadvantage is that most of our vendors are not source tagging. So we started with a test right around the end of October or beginning of November in one of our largest stores. We had a pretty successful experience with just seeing what happens when you correct goods that can be replenished, and the lift that you can get, however, it was only about 20 percent of the area that we were testing.

**Platt:** Ned, you have a lot of experience. What are some of your customers' use cases?

**McCauley:** I think the one that Eric mentioned is primary. Over and above inventory distortion, which a lot of retailers experience and are coming to grips with, there are a number of use cases. One simple one, as a good starting point, is what would we call display execution, or display audit. That's the idea of taking items that you would have, just samples on the floor and providing a display item, versus the back stock. What we found is that often times, there is a huge gap between the amount of unique styles that you have available for sale, but not on display.

RFID, in a very simple way, can be used to create a simple and fast audit process to ensure that the display items that you have on the floor actually represent close to 100 percent of what's available in back stock. When you close that gap and you can count and audit that function more frequently, you're much closer to being 100 percent compliant and that drives sales, as you demonstrated in your research with Macy's, Steven.

I think display audit is a simple starting point that is a proof point we have found to be pretty successful, as one example.

**Platt:** Roger, you have been asking us about RFID and have had interest in it for quite a long time. Why do you think it might be a good solution for retailers?

**Kibbe:** We are right around the same percentage for inventory accuracy as was previously mentioned. Back-to-front replenishment is the biggest opportunity, e.g., ensure the product is on the floor for your customers. There have been a fair amount of challenges here for retailers.

We do use stores as Distribution Centers (DCs) to support ship-from-store, and have the ability to reserve an item online for pick up in the store. Without RFID, we're doing a lot of "gymnastics" to make sure that that item is indeed in the store when we promise it to the customer, or when we try to allocate it to a DC or to the store for shipping. There is a lot of reserved inventory held back to support that. RFID would really unlock the ability to sell to zero.

**Platt:** Any words of advice for someone considering RFID, Roger?

**Kibbe:** Part of the challenge is asking the right questions in the business case to prove the value of RFID. Upfront planning is important.

**Platt:** Rick, you are a supply chain expert. You just mentioned you had some experience with RFID. What were some of the benefits and issues you ran into?

**Blasgen:** The benefits are primarily in inventory management. I remember I was involved early on with some of the pilots in retail back when the technology wasn't as good as it is today. There was always a lot of discussion from a major manufacturer standpoint, for example, "do we attach it (the RFID tag) to a pallet? Do we attach it to a case? Do we attach it to a unit, and how do I get my suppliers to embed it in their corrugate?" There were a lot of great ideas back then. I think a lot of the current activity around retail and inventory management and theft management, and so on, has great play, but for a broader supply chain view, we are always trying to understand how we can use that technology across the vast complex supply chain from Shanghai to L.A. to Kansas City, and embed it in greater and broader ways to do business and to take a lot of the volatility out.

I think there is a resurgence going on. Current supply chain folks are finally getting their heads above water, coming out of a wild recession where they hunkered down and didn't do a lot of investment. I've talked to a lot of my supply chain brethren who are once again interested in what's going on in RFID.

**Platt:** To the extent that retailers are really motivated/interested, the brands don't seem to want to help the process work. In other words, tagging before they ship it to the DC. Are you starting to see some of your shippers think differently now?

**Blasgen:** If we can prove to them that the overall benefits are there. They see a cost, and ask, "What do I do with all the data that it generates? How do I make better decisions with all this data?" I think there's a lot of interest. We should sort of revamp that whole area of, "yes, we generate a lot of data, but we can also benefit the supply chain, and here's how."

**Platt:** Andrea, can you please share how far along Walgreens is with its RFID implementation, as well as some of the issues of deploying in what is generally a smaller footprint store?

**Farris:** Some things preceded my time here, but back in the 90s, I think Walgreens had the largest deployment of RFID readers through Goliath. We all know Goliath actually doesn't exist anymore. The intent at that time was to adopt display tracking, and the ability to get the display on the sales floors.

I don't believe it was implemented; it is not currently live anyway. We are, to your point, starting to look at it again. I think display compliance and execution is very important for us, for our customers, and for our suppliers. We're looking at different ways through RFID to track assets across our supply chain. This way, I'll know exactly if it was delivered from the DC to the stores, if it's in the store's backroom, and when is it going to make it out on the sales floors, even where it is on the sales floors. It will also help us to determine how we ensure consistency and accuracy of our merchandising plan, our customer plan.

Certain display locations, especially in a smaller footprint store, have a higher real estate value than others. So we are at the early stages of reexamining that, in the context of a broader in-store technology footprint where RFID is one thing, but sensor technology, IOT, and beacons are all connecting together. All of these technologies are providing the ability to tell us who has the information or where the information resides and how to make it available to our team members in the stores and our store managers.

For us, it's not just about implementing RFID so we can track it up here at headquarters, but how we get that information to the operators in the stores so they can generate alerts, reports, and exceptions when action is needed.

**Platt:** Venky, what's your perspective on the impediments to adoption?

**Shankar:** The speakers before me talked about the advantages of RFID, mainly not being out of stock, aligning front and back, and also somebody mentioned ship to store. I'm also starting to study "buy online and pick up in store."

For omni-channel fulfillment, RFID is very helpful in tracking and anticipating. More recently, I've been intrigued by Amazon Go. Amazon is talking about hiring 100,000 people and opening 2,000 stores. Part of it is they are trying to use the Go concept, where people can check out themselves, and that model will not work without good RFID. That means that they must have tested it quite a bit and found out how to make it work.

So, I'm pretty interested in finding out how firms are trying to accelerate the adoption of RFID, without worrying about reducing costs, or persuading vendors and brands to tag. There are lots of retailers who are thinking that this is the wave of the future. If you don't have it, it's a must. So rather than finding out if I have an ROI or not, what's the best way to move forward? Those are the issues that I am intrigued about.

Related to that, Steven, is customer engagement. So far, all the RFID has been from a supply chain inventory management point of view, however, how can having the right RFID system make orders visible, trackable, and easily accessible? Will that lead to greater customer engagement at the store? Now there's brick and mortar, the online channel, omni-channel, and so on. How can we use RFID as a facilitator for that, rather than looking at purely cost metrics?

**Platt:** Roger and Tom, you are both students of store technology. You are on top of everything going on in terms of development. Do you see the industry moving toward broader adoption?

**Kibbe:** In the early 2000s, there was the supply chain initiative, case and pallet. There was a lot of effort focused on trying to understand what value RFID could bring specifically to the supply chain, and Wal-Mart,

for example, took a very aggressive approach with its vendors. I think ultimately supply chains, at least at that point in time, were built for barcodes. While barcodes are imperfect, they are still pretty good.

The opportunity for improvement was a couple of percentage points at best. I think what many of us learned from that experience was that the big problem starts at the back of the store, where much of the inventory distortion occurs. So the supply chain was served pretty well by the barcode, and it is in the last few hundred feet, that ultimately, many of the challenges begin. That was one of the main lessons we learned. We thought item-level RFID, focused on the four walls of the store and the distortion that occurs there, was the sweet spot. That's one part.

I would say the second part occurred as Wal-Mart became very interested in looking at in-store distortion and how to improve it. Just as that was happening, Wal-Mart faced challenges that stopped the momentum.

**Schuetz:** I think the most compelling use of RFID I saw in practice was Bloomingdale's in SoHo. The real key takeaway there was in denim. The customer takes a size off the rounder and the ability to replenish that rounder or shelf with that style and/or size of jeans within 24 hours avoided a markdown and maintained full selling price. This was a huge win for the store.

At Luxottica, we actually did embed RFID into the frames and were playing around with that primarily to counteract counterfeiting in Asia. I wonder whether some of the other technologies, like Bluetooth/BLE or similar, will leapfrog RFID at the item level in the store. I'm a big fan of RFID; don't get me wrong. I just wonder whether there will be a lower cost of entry for the newer technologies for merchants at the item level – not at the case/pallet level.

**Farris:** I agree, I think there might be alternative ways coming up in the future focused on what we, as the retailers, would like to accomplish with RFID – replenishment, loss prevention, and asset tracking. So, it could be a combination, in my mind, versus a single-use technology.

**Platt:** Michael, anything at J.Crew?

**Jacobs:** We have talked to a couple of vendors about the benefits of RFID, but no one has been able to demonstrate that there is an ROI significant enough for it to move off the dime. So, it's definitely in the back of mind, but no progress made to this point.

**Spiel:** I think the ROI is there if you are in a replenishment environment, which I would think J.Crew is – certainly if you can tag at source. The labor intensity of tagging in your DC or in your stores is just unbelievable. Then to have stores needing to hunt and peck, because not all of your goods are RFID-tagged, then we have to do an association between the RFID tag and the SKU at the store level. This adds a process that slows goods getting to the floor.

The benefits are there in replenishment. I was able to measure it simply because we were at the end of our cycle, and we had 11 months of deterioration in the inventory quality since our last physical audit. The lift for us is in being able to replenish goods. You can't sell, obviously, what's not there. In some of these programs where we know we can get back in stock in about a week or two at the most, our book records are telling our buyers and planners that it's on the floor and it's simply not there.

For me, it's a huge benefit that way. We just started with the display compliance piece, but we're having some problems with the stickers because we had to use stickers that could be peeled off for return reasons with Nike. The in-stock position of your stores is, for us, probably the number one opportunity to drive sales. Out-of-stock, you just upset the customer who doesn't have time to shop, and your team back in the office is without knowledge because your book records indicated an item is there.

There is a direct ROI. It's just a question of how big that can be based on your ability to replenish.

**Jacobs:** Or having the ability to actually identify the sources of ROI.

**Spiel:** The physicality in the store environment has been a little bit of a challenge for us, too. A store will get a delivery every single day. They bring stock into the back room, depending upon the timing of when they can do the tag association and get it into the RFID system. If those goods aren't associated when they do a count and the counter picks it up, we end up with false negatives. We have to do screening of back rooms

to separate that from the sales floor and be able to hide tags so that they don't get counted, because the readers can read from quite a distance.

The technology actually works. It's the human element of it that has been the challenge. The direction that many companies are moving with active tags, sensors, and beacons, is taking the human element out of it, leaving the equipment to take care of it for you. It is a very expensive infrastructure, though I think it takes some of the errors out of the process.

**Platt:** I wonder if anybody has any thoughts or comments on a more fixed reader technology? This is the type of system that allows you to take inventory any time you want to, just by pushing a button.

**Kibbe:** The capability is great. I have seen stores where there is a reader about every four to five feet in the ceiling. The thing about having many readers is that the capability comes with high costs.

Still, in my mind, that is the future. If the cost comes down, having those in the ceiling or somewhere equivalent is ideal. If you can eliminate the need for associates to “wand” – along with the labor and the training that is necessary for those associates to do that properly – RFID provides an anytime look at your inventory view, and that is obviously nirvana.

**Shankar:** I would be interested in hearing perspectives on the topic of NFC, the near field communication technology. This technology can be powered through software on smartphones, and so on. One of the auto ID systems that might leapfrog RFID is rumored to be some kind of a combination of NFC with other emerging technologies. Does anybody else have any view on this?

**McCauley:** RFID, in my view, is a component of the Internet of Things, which will include many super-low-cost sensors that will do a variety of things for a variety of reasons in the near future. I think NFC and RFID, as we know it, are compliant with the Electronic Product Code for retail. Mobile devices that are capable of NFC reads are part of that. At a high level, there is an ecosystem of sensors and devices that are starting to emerge that will collectively work to solve a lot of these problems. We are still in the early stages as the IoT ecosystem builds out.

All of them, from Bluetooth to RFID and NFC, will play a role in many of the things we'll talk about.

**Platt:** Rick, as you talk to your shippers, do they see what's happening in retail? What will their role be and how will RFID impact them?

**Blasgen:** Some of them do, at least the more forward-thinking ones. They will always get you in a conversation around collaboration and how much information people are willing to share, up and down the supply chain. If they can manage inventory better and affect other areas of the supply chain, like transportation, they are going to be all for it. If it's a major manufacturer with capital-intensive plants that are designed to produce for long runs and infrequent changeovers and things like that, what does it mean to them?

The discussion includes, “Carrying costs aren't going to be the same. Interest rates are going to go up, which means that we are going to focus more on inventory regardless of whether it has a shelf life or not. It is just going to be more expensive to carry.”

**Platt:** Help me understand something. I've read that Wal-Mart is having certain vendors basically do online fulfillment for them now, so the items are not even being shipped to the store. For example, a truck going from L.A. to New York, might have to pull off on the side of the road for a helicopter or a robot-controlled drone to pick up a couple of items, then they can get said items to the customer quicker. It seems to me that all that intelligence would be top of mind for shippers, wouldn't it?

**Blasgen:** It is. In fact I was just at Uber mid-December, as they launched Uber Freight. They are light years away from scale with autonomous vehicles and things like that. What we will see as a typical consumer, for example, an Anheuser-Busch truck going down the road with no driver in it, that is not going to be something you are going to see in any great scale over the next four or five years. But what you have just described, a truck that is en route and a drone making a delivery, that's expensive. I think what manufacturers and retailers alike are dealing with is, what does that mean?

When e-commerce becomes 50 or 60 percent of my business, I'll ask, "what do I do with this real estate out there? And how does that affect the local delivery system? Do I still have mega distribution centers in cornfields in Iowa? Or do I need some other distribution system that's much closer to the density of the population? How do I set up a distribution system for that?" That affects the whole transportation system, and frankly, the whole distribution system.

**Kibbe:** I think you are spot on. The challenge is not only that e-commerce is becoming an even more sizable portion of your business, but also the growing consumer demand around promise windows and shipping windows. Like it or not, those expectations are there. In the future, everyone is going to have to meet these new expectations.

What do you do? Certainly, you can use your store as a distribution center. You can leverage the back room of an existing store or create a "dark store" in an urban environment that essentially is a DC. I think leveraging your store real estate is probably one of the better opportunities. Now, one of the problems of the ship-from-store that we have is cost. The DCs are very efficient at shipping items to a customer. It is not so efficient in the stores.

The challenges are in operational and training issues. The question becomes, should retailers take some of their logistics expertise and bring that to the stores? Or even in a big store, should retailers have a logistics person working there? These are things that retailers are exploring and thinking about right now. They offer a grand opportunity to handle the promise and delivery challenges and pressures on every retailer.

**Platt:** Tom, how many stores does hhgregg have?

**Schuetz:** We have 220 stores and ship from each in addition to our distribution centers. We also have a high-end appliance brand called Fine Lines that we continue to grow. Anytime IT tries to add one more task to an "already busy" store associate, we get pushback. Our business is primarily big-ticket items, which is a difficult sell to begin with and closing the sale is only half of the job – we still have to coordinate in-home delivery and be successful. Anything requiring labor hours – which retailers have been historically driving down over the past 10 years – creates a challenge.

**Platt:** Folks are finally waking up to the benefits of RFID, I believe in a big way. From display compliance, inventory accuracy, omni-channel, and fulfillment back to front, they are all great use cases. We have some great data coming out on all of that, that I'd love to share with all of you and get your opinion, but I think that the data has even more uses. That will even make that ROI analysis much greater.

One of the use cases we talk about, which I firmly believe is going to happen at retail, is dynamic pricing – where pricing is going to need to match and change fairly consistently. Now, this might be a few years off. Kroger, for example, has implemented a digital shelf-edge display that carries video capable of instantaneous price changes. As you start incorporating inventory, weather, and traffic data, all of a sudden that RFID data – accurate inventory data, where the inventory is, where it is in relation to the customer – becomes incredibly valuable as you view having a true digital store, which I think is necessary for survival.

**Shankar:** I'm glad you raised the issue of dynamic pricing. One of the obstacles of dynamic pricing in the brick-and-mortar and online environments is the transparency issue. You would like to dynamically price by different customers according to their willingness to pay, the time of the day, demand levels, and so on. Unfortunately, if your price is changing based on availability of goods and the environment, it would be very hard for you to customize pricing for different people. So, I wonder how retailers will take care of this without shoppers talking to each other and learning that someone picked up an item at a higher price versus lower price in the same trip.

**Platt:** The fairness issue that surrounds that is going to take awhile. However, if you think about it, we already do that. For example, hotel rooms, airline tickets and rental cars. These are all based on supply and demand and other factors. But there are applications beyond that.

For example, I have a cut of beef that I am selling for \$5 a pound. There are two days left until it expires and it has not been purchased. I'm going to either sell it or have to dump it. Maybe if I move that price down to \$4 a pound, I can salvage some margin. So, dynamic pricing is not necessarily only motivated by gauging the customer in the store. There are eight feet of snow in Chicago and I need a shovel. Guess what? They don't have dynamic pricing, but I know the price is going up. That's reality. I think there are a lot of operational issues that this type of application could solve.

**Shankar:** These examples are stand-alone because they don't involve customers interacting. In a store environment, for expiration issues, if you drop the price within an hour and that same customer is shopping in the store and now sees a different price, that is the problem. Amazon abandoned that experiment when people started seeing different prices when they were sitting next to each other in the same room.

Is there a way to operationalize it in such a way that that's not an issue? It's about making people feel, "Oh, that's reasonable. That's fair because it is raining and I have to pay more." That's the kind of thing that I was thinking about.

**Platt:** Michael and Tom, what do you think about using RFID data in other ways, or are we still just trying to get the RFID system in the store?

**Jacobs:** Again, early read at J.Crew is I think there are bigger fish to fry right now, and I think this is going to take a backseat for a fair bit of time.

**Schuetz:** Similar to Michael's experience, I think for a grocer like Kroger, it makes perfect sense. We are "everyday low" and part of our selling experience is for the associate to conduct a real time check against our competition with the customer, and we meet that price. We have a relatively small SKU count in-store, so labeling is not a tremendous labor issue for us, considering the expense to go digital – and we have crunched the numbers.

**Platt:** Would anyone like to add anything about what they are seeing in terms of adoption rates? Any advice for retailers? Eric, you're going through the fun part of piloting. Is there any advice you can offer?

**Spiel:** Our test is about the store execution, not the technology. We found a few areas to tweak and we have some excellent partners working with us. It is about making it work at the store level. The labor conversations that this group has addressed are going to be a multiplier going forward, just with rates going up. We have to make it efficient and effective for the stores. They have to buy in, and feel like they are getting a win. Most are incentivized on sales or other forms of profit, so them being able to see, touch, and feel the results – and in their paycheck is even better – is super important to compliance.

**Platt:** Rick, any parting advice you can offer?

**Blasgen:** I just think as I travel around the world, I wonder about India, China, and some of the European countries, and how we'll get to a global adoption. And, if we find life on Mars, what do we do about intergalactic supply chains?

**Platt:** Ned, what are you seeing in terms of adoption? You're out there talking to a lot of people. We're getting a lot of phone calls about RFID and it seems like people are really starting to take it seriously. What are you seeing?

**McCauley:** We are seeing the same thing. The foundational use case of inventory accuracy is much more understood today than it was even a year or two ago. That's due to a lot of work that you and others have done. I also think that the idea of how retailers leverage the physical stores for the purposes of omni-channel fulfillment is central to success. Also knowing what you have and where it is, is just a key formula.

Omni-channel fulfillment is definitely driving those who haven't looked at RFID in the past to look at it again. If you combine inventory accuracy with omni-channel fulfillment, with all the other secondary use cases – display audit, loss prevention, and fitting room conversion – it's starting to add up to be a really compelling ROI.

**Platt:** My thanks to our panel for their insights into the implementation and use cases of RFID technology.

For additional information on RFID and the PRI research at Macy's, please [download](#) the Working Paper "Quantifiable Benefits and Analytical Application of RFID Data."