

An Overview of RFID in Retail Today

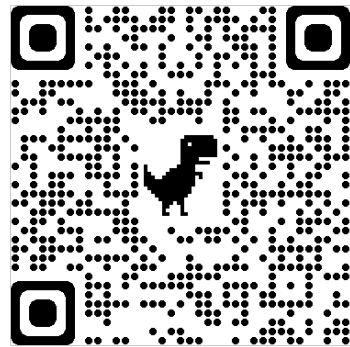


Introduction



40 Years in the Retailer / Supplier Industry

P&G



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There is only one boss. The customer.

And he can fire everybody in the company from the chairman on down, simply by spending his money somewhere else.

-- Sam Walton, founder, Walmart

The Big Idea

“Knowing what you have and where it is located in a retail store environment without human intervention is a disrupter in the retail industry”





Retailers are missing out on nearly \$1 trillion in sales because they don't have on hand what customers want to buy in their stores



Amazon Prime members, facing empty shelves, are 52% more likely than other consumers to take out their phones and buy what they need online



24% of Amazon's current retail revenue comes from customers who first tried to buy the product in-store.



IHL Group

U. S. E-Commerce Sales

Sales of the 10 leading consumer electronics retailers in North America: 2010 – 2018 (in billion U.S. dollars)

US Retail Ecommerce Sales, by Product Category, 2021

billions, % change, % of total retail ecommerce sales and % of total retail sales

	Retail ecommerce sales	% change	% of total retail ecommerce sales	% of total retail sales
Computer and consumer electronics	\$194.94	9.1%	21.5%	53.2%
Apparel and accessories	\$183.52	18.9%	20.2%	37.9%
Furniture and home furnishings	\$105.93	12.3%	11.7%	31.3%
Health and personal care and beauty	\$85.67	16.1%	9.4%	14.9%
—Pet products	\$16.28	7.1%	1.8%	30.1%
—Cosmetics and beauty	\$12.98	9.7%	1.4%	17.8%
Toys and hobby	\$64.74	13.1%	7.1%	45.4%
Auto and parts	\$62.73	13.5%	6.9%	4.8%
Books/music/video	\$53.85	12.5%	5.9%	69.1%
Food and beverage	\$53.42	18.1%	5.9%	4.8%
Office equipment and supplies	\$18.53	8.5%	2.0%	39.9%
Other	\$85.42	13.4%	9.4%	6.1%
Total	\$908.73	13.7%	100.0%	15.5%

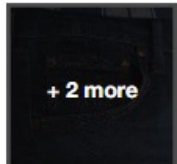
Note: includes products or services ordered using the internet via any device, regardless of the method of payment or fulfillment; excludes travel and event tickets, payments (such as bill pay, taxes, or money transfers), food services and drinking place sales, gambling and other vice goods sales

Source: eMarketer, Feb 2021

[Target](#) / [Men](#) / [Men's Clothing](#) / [Jeans](#)

Wrangler Men's Relaxed Fit Jeans with Flex

[Shop all Wrangler](#)



\$19.99

★★★★★ 407 [9 Questions](#)

Quantity

1

Color Marine



Size

34x29

Pick up
tomorrow
at [Fayetteville](#)
[Edit store](#)

Only 3 left
Ready tomorrow with Order Pickup

Pick it up

Deliver to 72730
[Edit zip code](#)

Ship it

Order by 11:30am tomorrow

Get it by **Thu, Apr 30** with free 2-day shipping
on \$35 orders

Registry/List

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About this item

The Value of On-Hand Accuracy

The notion of inventory accuracy refers to all the discrepancies that exist between electronic records that represent the inventory and the physical state of the inventory.

SKU	Description	Store On Hand	Actual On Hand	Accurate	Status	Re-Order point
1234567890	Jeans 32 x 32	4	4	100%	Perfect	2
2345634234	Jeans 32 X 34	3	5	0%	Understated	2
2345634585	Jeans 32 X 30	3	1	0%	Overstated	2
2343454542	Jeans 30 x 30	3	0	0%	Critical Overstated	2
Total				25%		

Inventory Accuracy in Retail: 45% – 65%

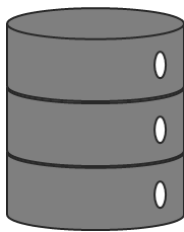
How RFID Works



RFID Serialized Tags placed on merchandise at source



Readers wirelessly obtain tag information



Passed to local software and infrastructure

WRG RLXED FIT FLX JN \$17.87

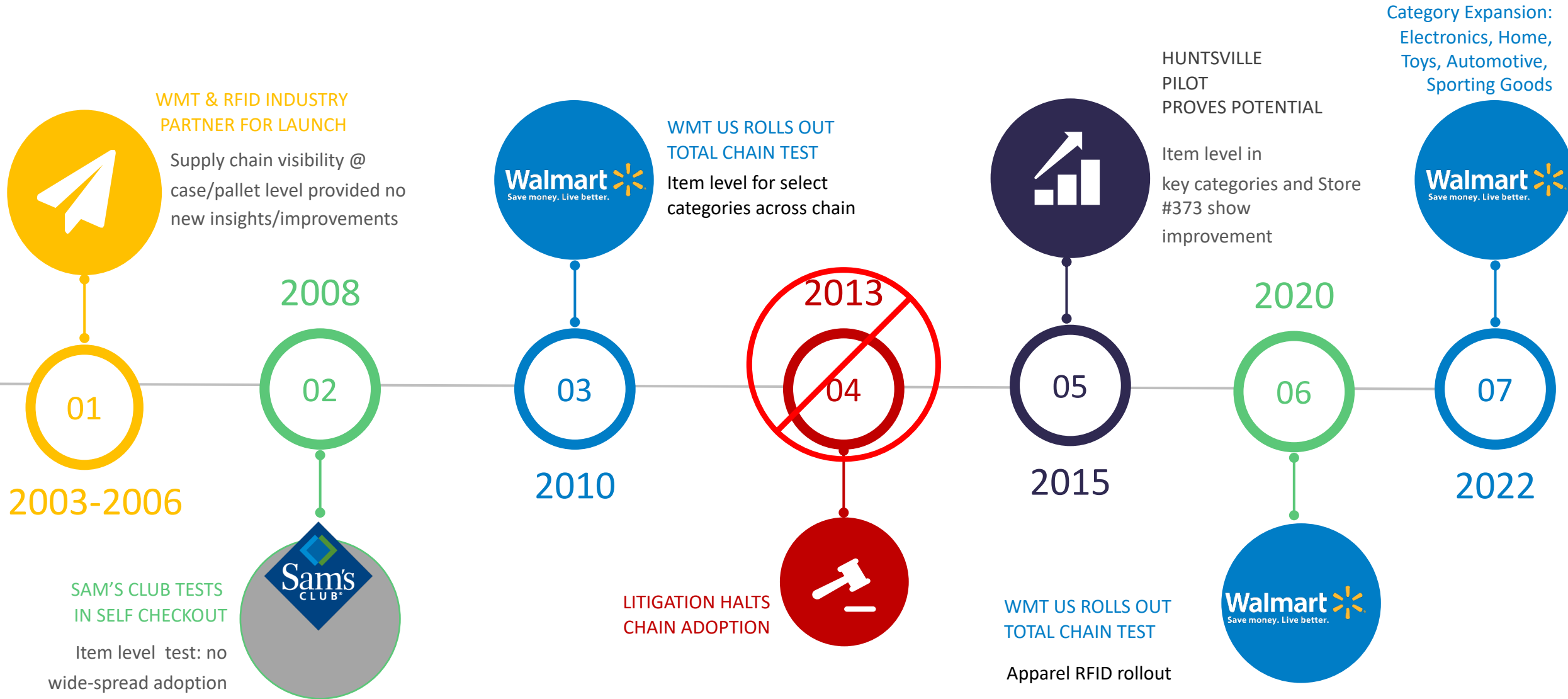
UPC:	19105635553	Dept.:	23
Item:	562946000	Color:	EXDARK
Size:	42X30		

Inventory

0 Bin	3 On Hand	3 Sales Floor
📦 Case Pack 1		📦 Shelf Cap 3

Update On hands

Walmart History With RFID



Category Expansion:
Expectation is 100% RFID tags coming into the stores by 9/2/2022.

Walmart Re-Commits to RFID with Supplier Mandates

February 1, 2022

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Global retailer Walmart is proceeding with mandates for radio frequency identification technology, requiring its suppliers in some departments to include RFID tags on all products provided to the store by September 2, 2022. The mandate includes makers of home goods products, as well as some hard lines (such as hardware and automotive products), as well as some entertainment and toys. The mandate follows an expansion of RFID use in the stores for apparel goods.

In 2020, Walmart began to deploy UHF RFID technology at its stores to track apparel goods as they were received, displayed and sold. The passive UHF RFID labels are linked to each garment to create a unique identity that can be captured via handheld or fixed readers. That makes it possible for the retailer to ensure proper stock levels at each store, and to thus ensure on-time replenishment. Since launching the technology, says Shelly McDougal, Walmart's senior director of merchandising, "We have seen dramatic results in our ability to ensure product is available for our customers, leading to improved online order fulfillment and customer satisfaction."

As a result of this success, Walmart says it decided to expand with this most recent mandate. To support its suppliers, the company plans to host training sessions and share standards and technical requirements to help get them started. Many suppliers, an

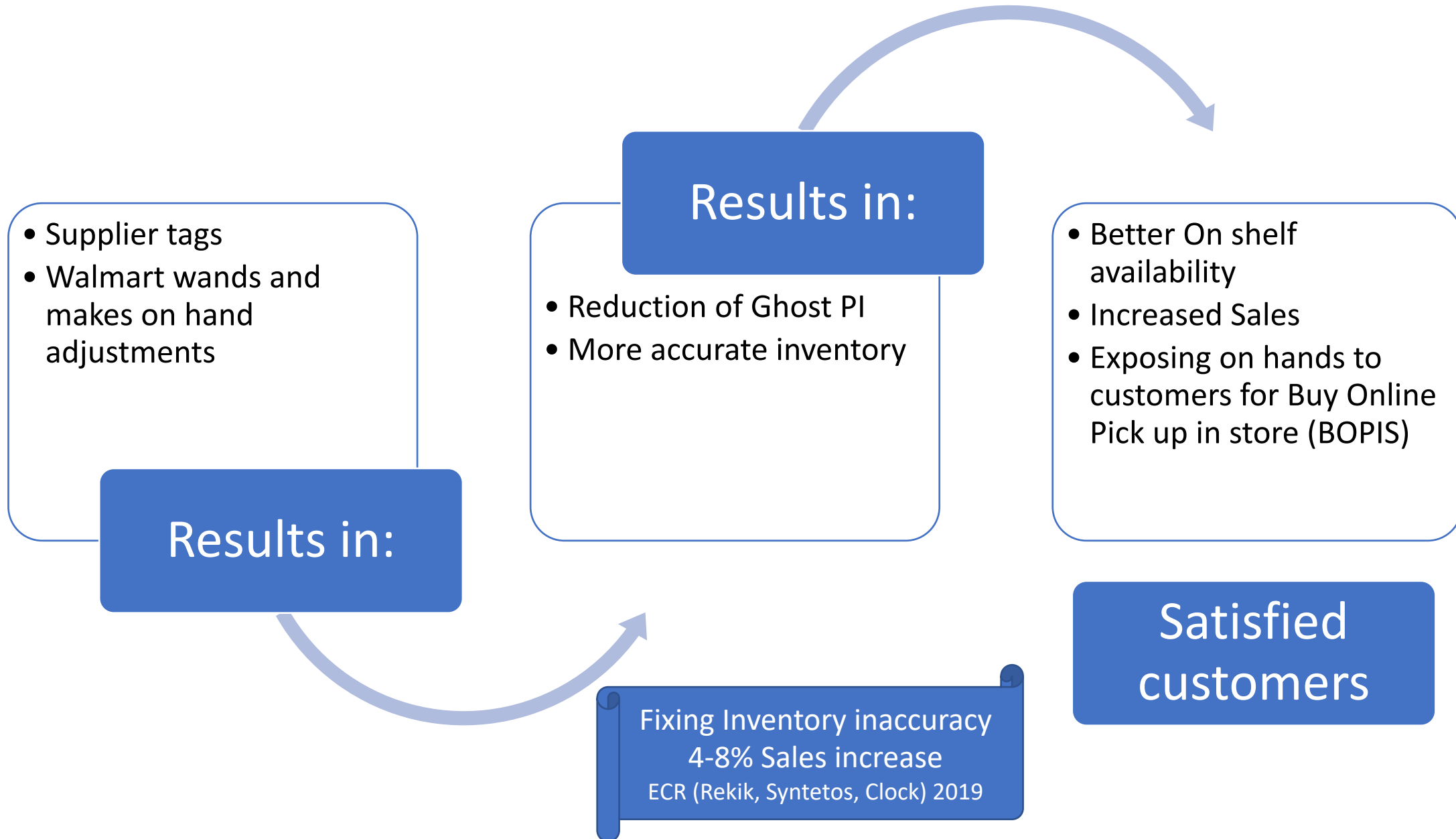
Beyond Apparel



Mandate

- Home departments – D14, 17, 20, 22, 71, 74
- Entertainment departments – D7, 72, 87
- Hardlines departments – D9, 10 tires, and batteries

Why RFID Is Important to Walmart Suppliers



20+ Years of RFID at Retail - Learnings



Business Driven –
Technology enabled

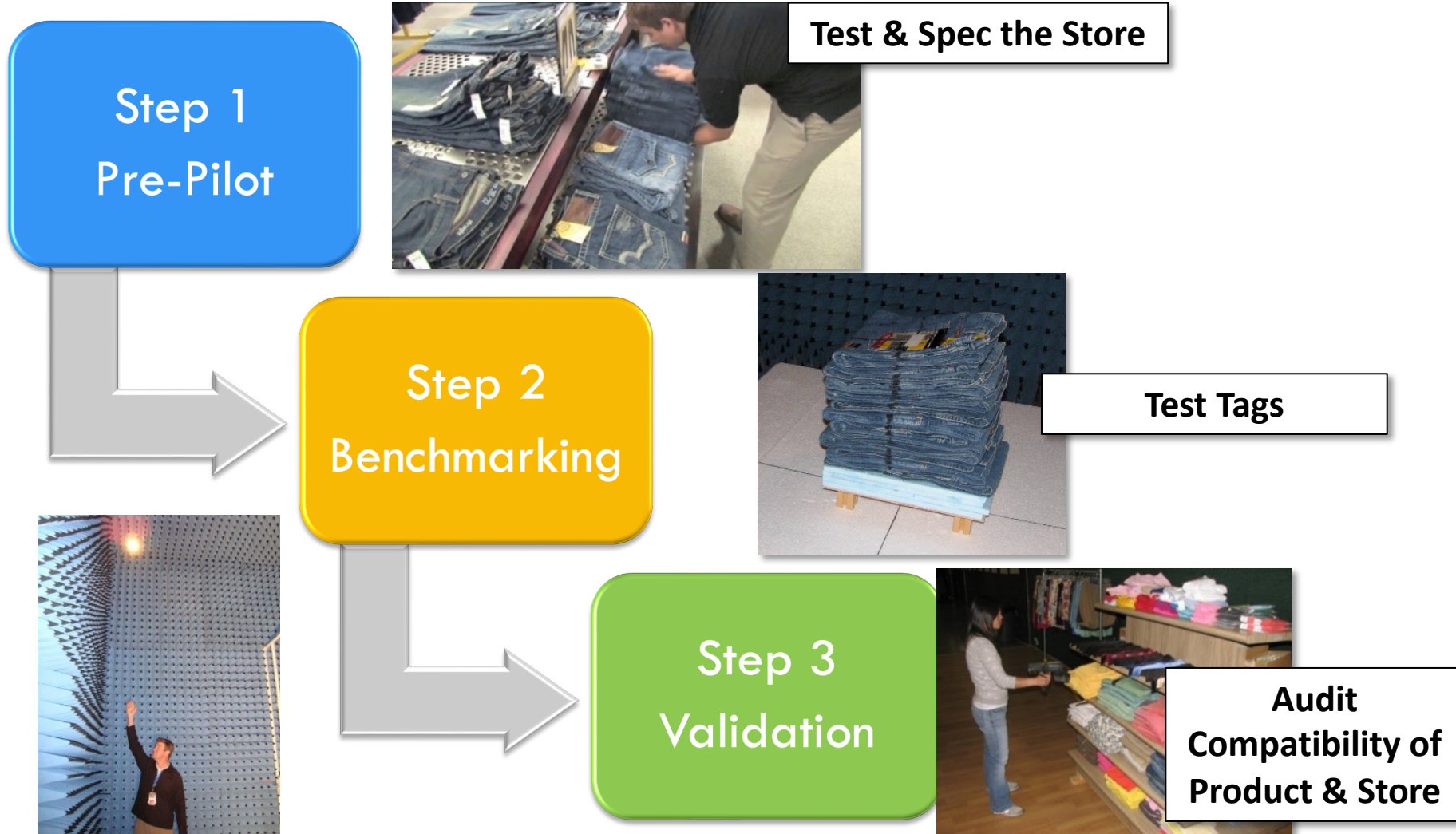


Retailer Top
Leadership
Sponsorship

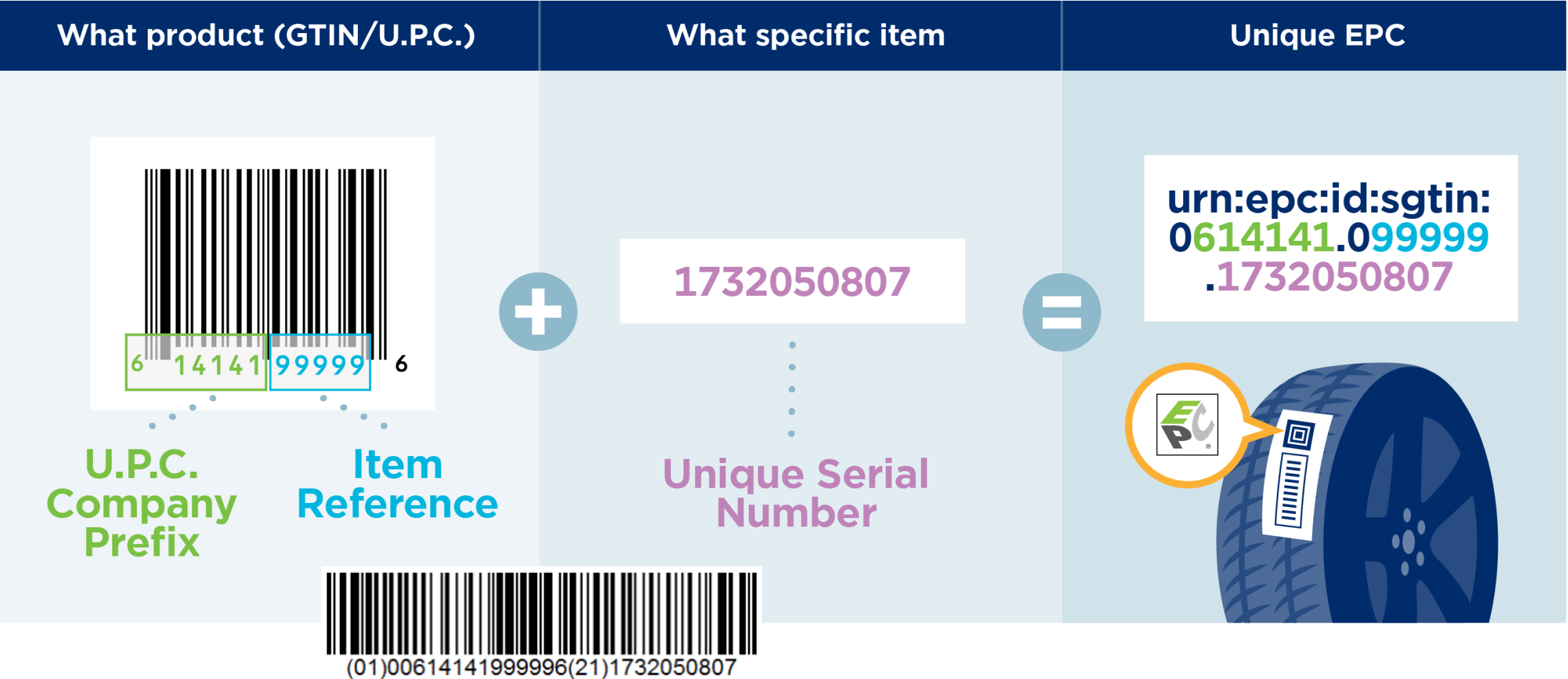


Industry Standards

TAG Selection – Auburn ARC



Tag Encoding - GS1 – US RFID encoding standards



Tag Marking - GS1 Tag marking standards

- RFID tags should have the EPC symbol printed on them.
- The EPC symbol should ONLY be placed on an item that has an RFID tag.
- The EPC symbol should be visible when viewing the U.P.C.



Symbol Guidelines: <https://www.gs1.org/standards/epc-rfid/guidelines>

20+ Years of RFID at Retail - Learnings



Business Driven –
Technology enabled



Retailer Top
Leadership
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Industry Standards



Measure Everything
– Results and in
process



Data Capture – Focus
on future business
needs

Business need – Data capture options



Wandering -Weekly

MVP Fixed + Autonomous
Readers – Daily

Full Fixed infrastructure
Continuously

On-Hand Accuracy (exact match >95%)*	✓	✓	✓
On Shelf Availability	✓	✓	✓
BOPIS - Omni Enablement and Fill Rate >95%	✓	✓	✓
Markdown Reduction	✓	✓	✓
Annual inventory removal (potential)	✓	✓	✓
Real time picking – BR Replenishment			✓
Real-time automated OH-updates			✓
Location Accuracy - Real time			✓
Shrink alerting and reporting		✓	✓
Asset Tracking – Fixtures and Handhelds			✓
Track where merchandise sells from			✓
Electronic proof of delivery		✓	✓
Dynamic BOPIS Inventory Exposing for customers			✓
Automated Data Capture		✓	✓

*Assumes consistent store execution

Supply Chain Experience Center



Raw Materials



Manufacturing / Distribution



Carrier Distribution



Shopper



Stores

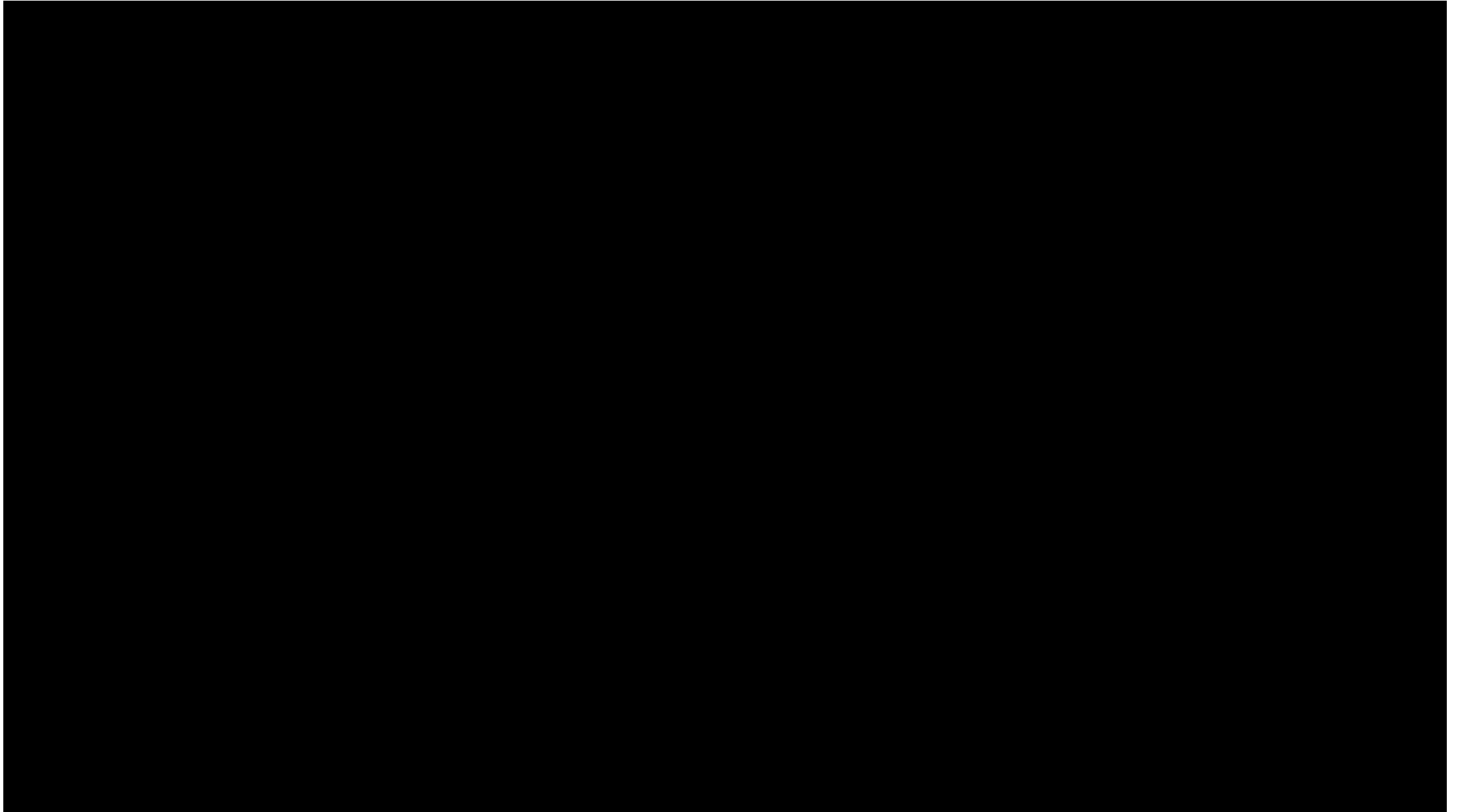


Transportation

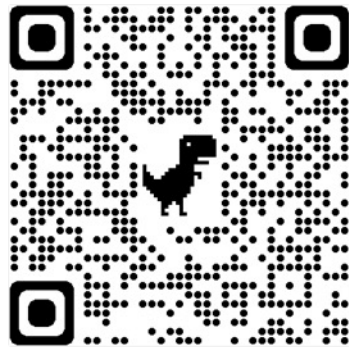


Retailer DC

What does the future look like?



Questions / Discussion



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