2023 Survey of Retail Industry Innovation

The DART Group evaluates retail innovation and compiles findings into industry survey

AUBURN
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Introduction

In 2022 and 2023, The DART Group analyzed how changes in retail format impact customer experience. Throughout this collection of work, DART realized a pattern. Successful innovations consistently impacted three areas:**time in store, product handling, and dependence on associates**

In this industry survey, you will find four different innovations that are all impacted by the metrics above. The DART Group uses their Process, Layout, Metrics Model to analyze and explain how these innovations impact customers.

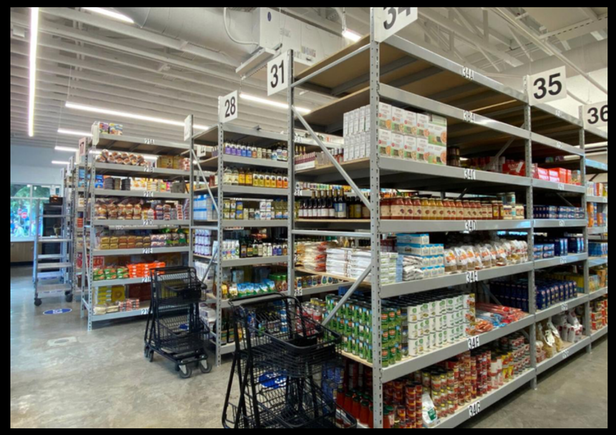
BOPIS Drive-Thru Pick Up

Explanation of New Technology

After many years of slow growth, BOPIS reached mainstream adoption in 2020 during the pandemic, and since then, consumers have only become more reliant on the fulfillment strategy. This is especially true in the area of grocery pick-up. While it is convenient for shoppers, it has placed additional burdens on grocery retailers and increased demand for employees to fulfill said orders, crowding the isles of stores.

The layout of brick-and-mortar stores is often not optimized to handle the volume of BOPIS orders grocers are now responsible for, which causes additional challenges. With these things in mind, The DART Group sought to understand potential solutions being used in the market.

DART's most interesting finding was an independent drive-thru grocery store, Opie, located in Mount Pleasant, South Carolina. With this model, shoppers drive up to an order window or place a mobile order. Orders are then fulfilled within five minutes of arrival. Similar to a fast-food drive thru, shoppers do not go inside and their order is delivered to their car window. With these findings in mind, DART envisions a future where similar principles are applied to a grocery store's BOPIS operations. Grocers could mitigate challenges of having BOPIS operations in their main location by acquiring and converting the building of a fast food restaurant or building a new space with a similar structure. It is perfect for this operation as the existing drive-thru is a key opportunity for transformation in grocery BOPIS fulfillment.



Grocery storage where employees fulfill pick up orders

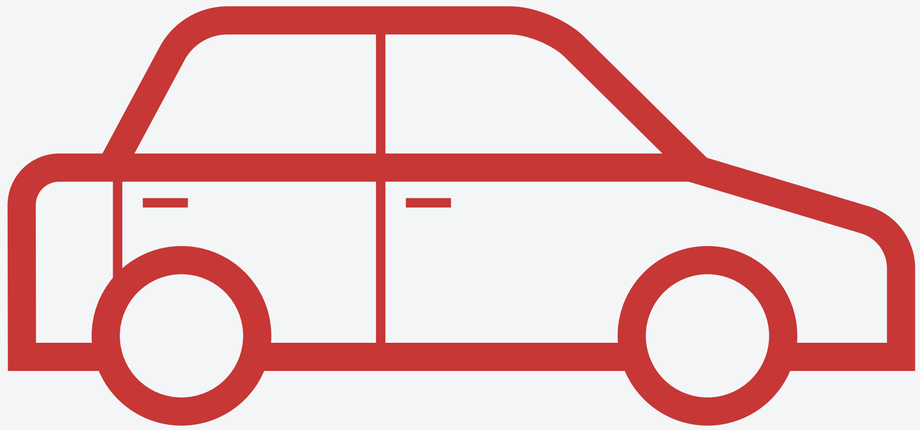
Opie storefront

Employee assisting customer with pick up order

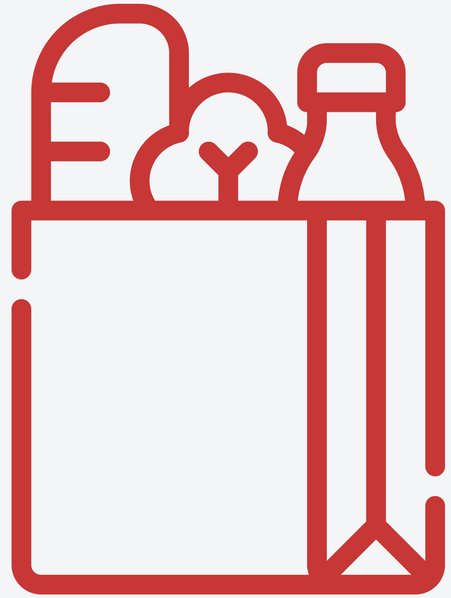
PROCESS

Differences in the customer journey are detailed in the following process flows. With a drive-thru pickup model, operations would change significantly. The operation location would change and retailer processes would be different. However, if looking at changes from a customer experience perspective, changes are not extensive. There is one step of differentiation- instead of driving to a designated parking spot and waiting for groceries to be delivered to your vehicle, the customer drives through the drive-thru window to collect items.

Order groceries online

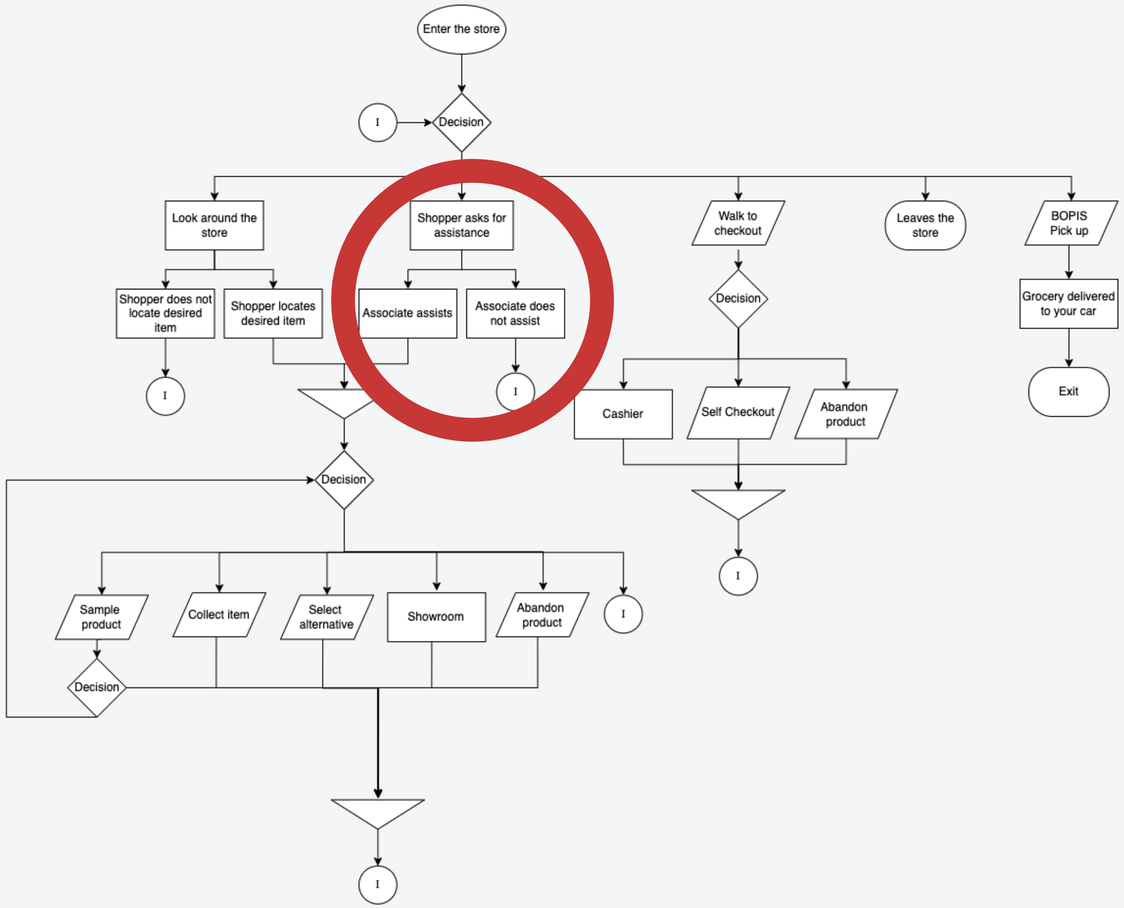


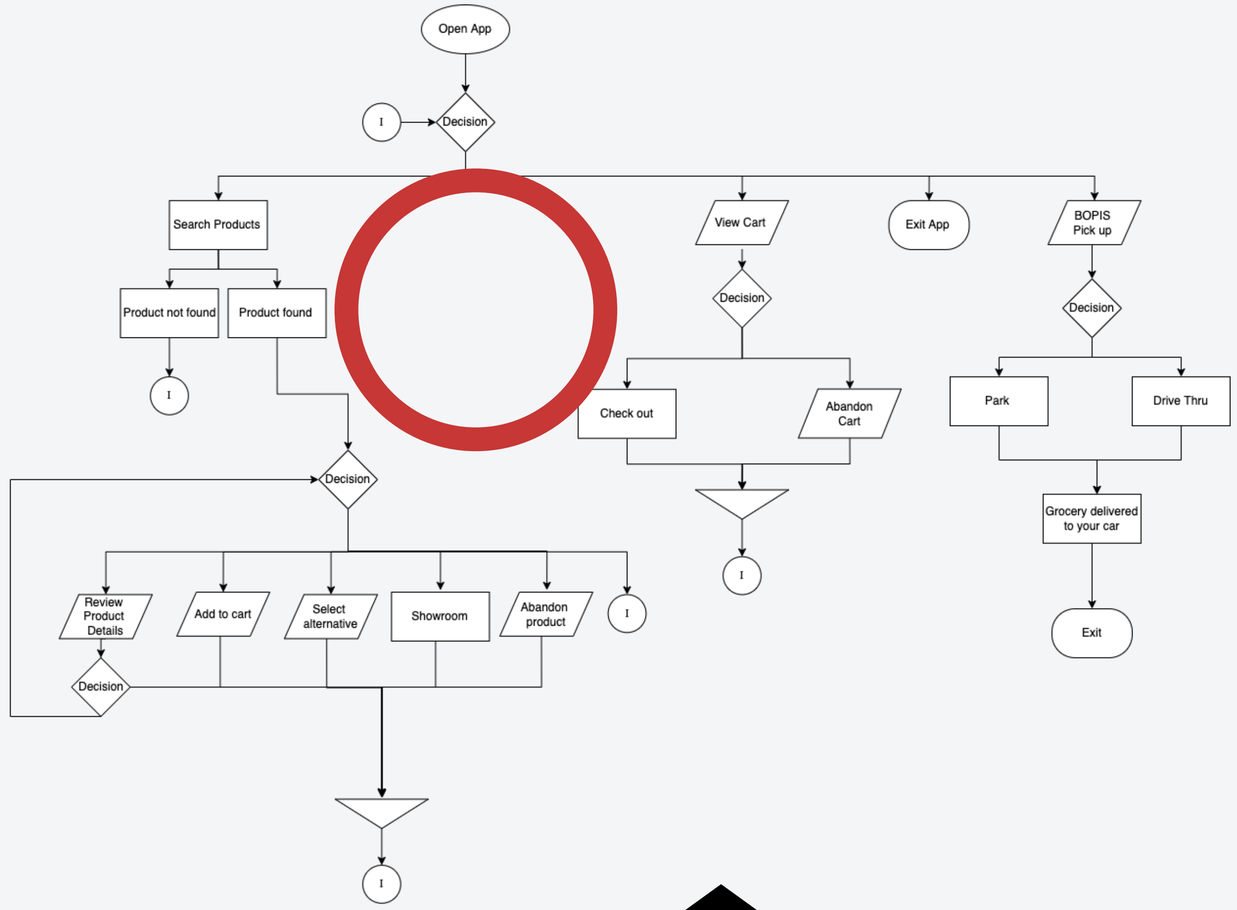
Go through drive thru



Pick up groceries

Traditional BOPIS Grocery Process



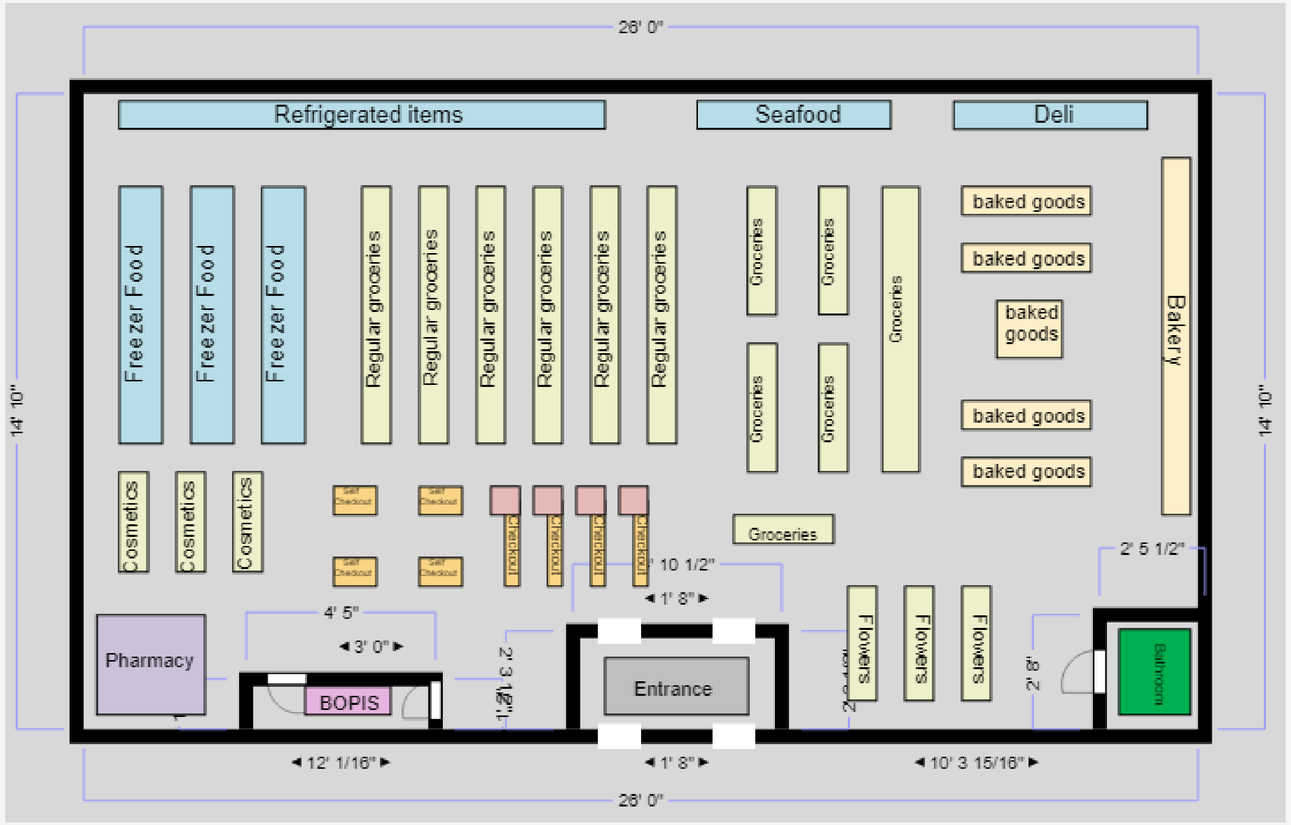


New BOPIS Grocery Drive Thru Process

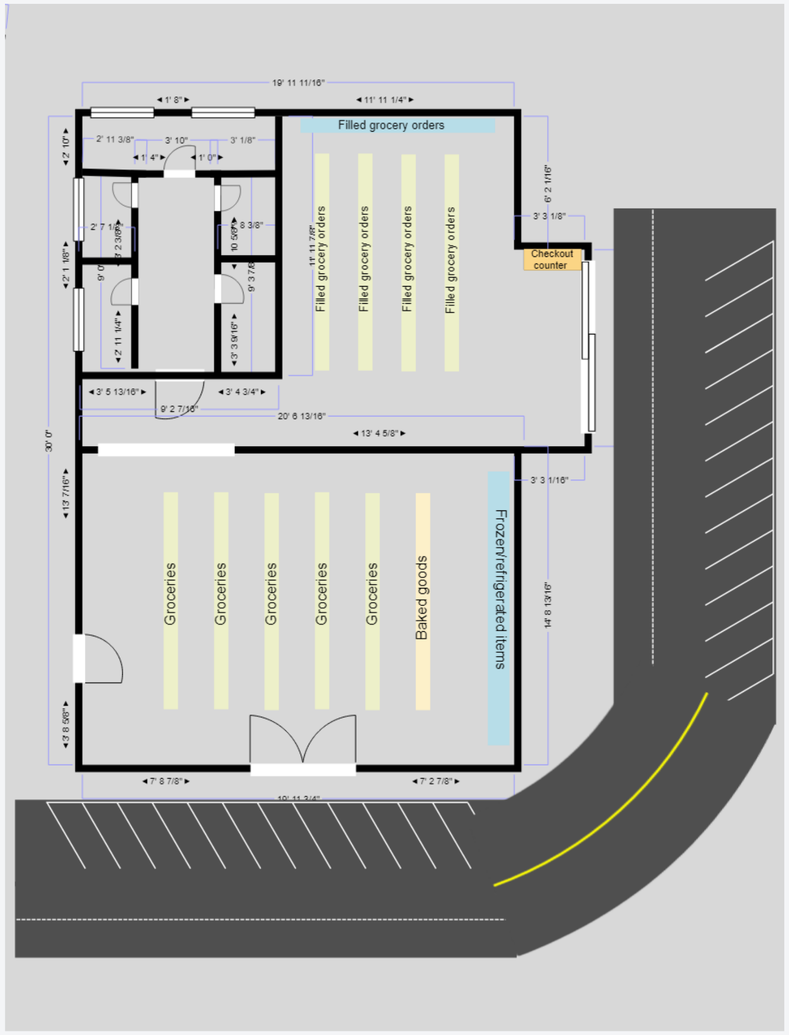
LAYOUT

Opie is laid out similarly to a fast-food restaurant and operates, while also operating as a dark store. The inside is set up as a distribution center with isles of merchandise and a place to store fulfilled orders.

Traditional



Drive Thru



METRICS

In line with the theme of industry findings, this innovation impacts time in store, product handling, and dependence on associates. In this model, time in store is reduced by 100% as the entirety of customer involvement with the picking process happens on a mobile device. According to studies the average length of a traditional grocery trip is 41 minutes. The average BOPIS pick up process takes around 5 minutes. Therefore, by transitioning to an Opie model there is a net time save of 36 minutes. Product handling and merchandise touchpoints also decrease. With studies suggesting the average shopping trip result in the purchase of 15 items, it also reduces the in-store touchpoint by 100%. Dependence on associates increases and results in a delta of one. As customers outsource the process of grocery shopping, they are inherently dependent on an associate to take over the process. Customers have ownership of the mobile ordering process (+1) but then depend on associates for picking items and collecting items (-2), resulting in a net increase on associate dependece by one action. This is a good thing in the eyes of the customer because they are outsourcing a task and reducing time in store.

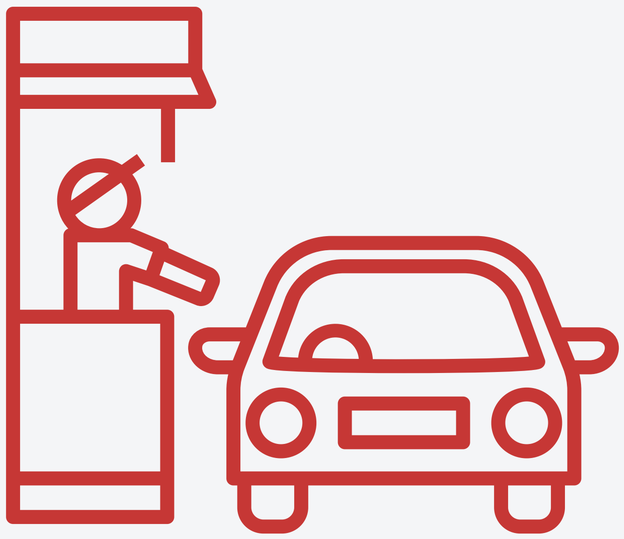
Δ -36

Δ -15

Δ +1

CONCLUSION

Drive-thru BOPIS is an innovative and effective way to deliver orders to customers. It creates an efficient fulfillment process while also mitigating the downsides of in-store fulfillment.



KroGo

Explanation of New Technology

Kroger has introduced a new way of shopping to its stores. This new shopping experience is called KroGo. In this new process, you shop, bag, and checkout by using technology connected to the cart. The cart has a built-in scale and camera. You can also see your running total while shopping to stay within budget. This technology provides a shopping experience with less contact and faster checkout.

Process

As customers enter they retrieve a shopping cart with a small computer screen, scanner, and card reader connected to it. Any personal items should be placed in the front basket. Next, customers set up their reusable bags and have them weighed on the scale at the beginning. If the customer has a Kroger card, the system will ask users to scan it before they begin shopping. From there, customers begin shopping and scanning their items. The cart scale is often used to weigh and price produce. Once customers are done shopping, they checkout on the cart using a card. Then exit through the self-checkout area.

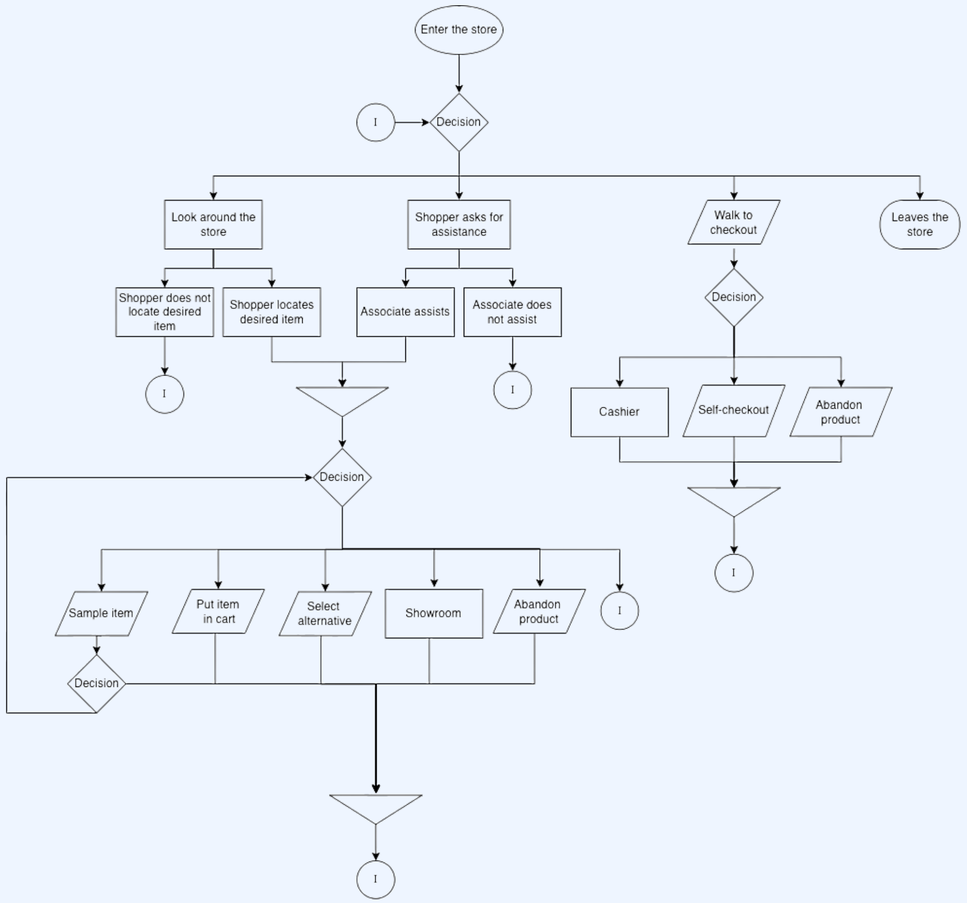
Retrieve cart with computer attached

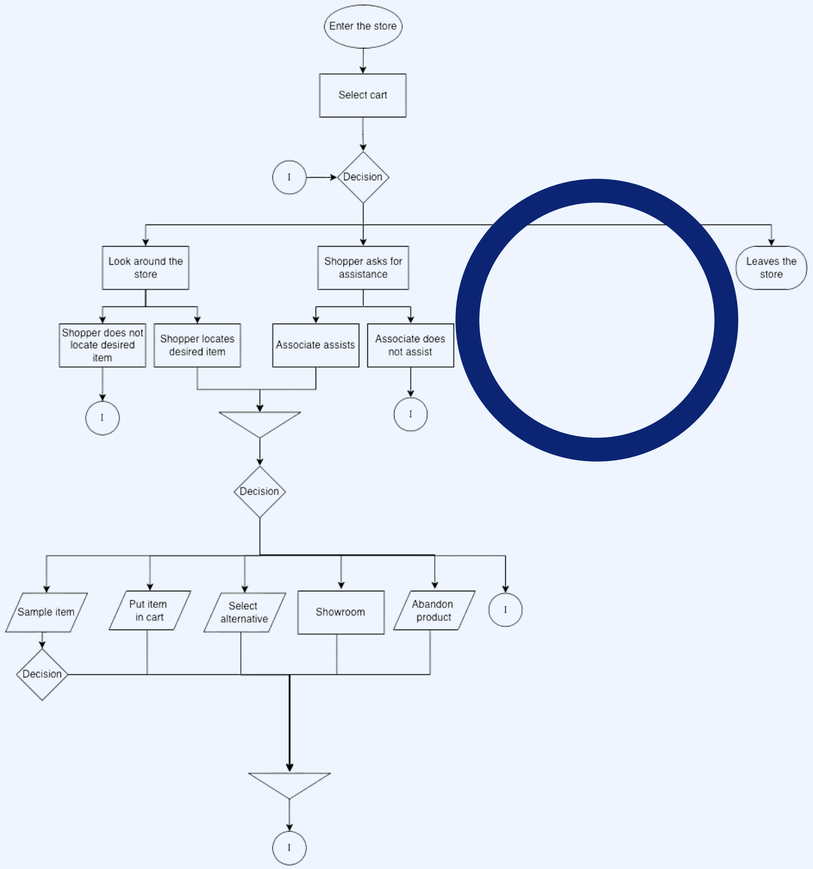
Set up reusable bags and weigh on scale

Begin shopping

Checkout with card on cart, then leave through self checkout area

Traditional Process



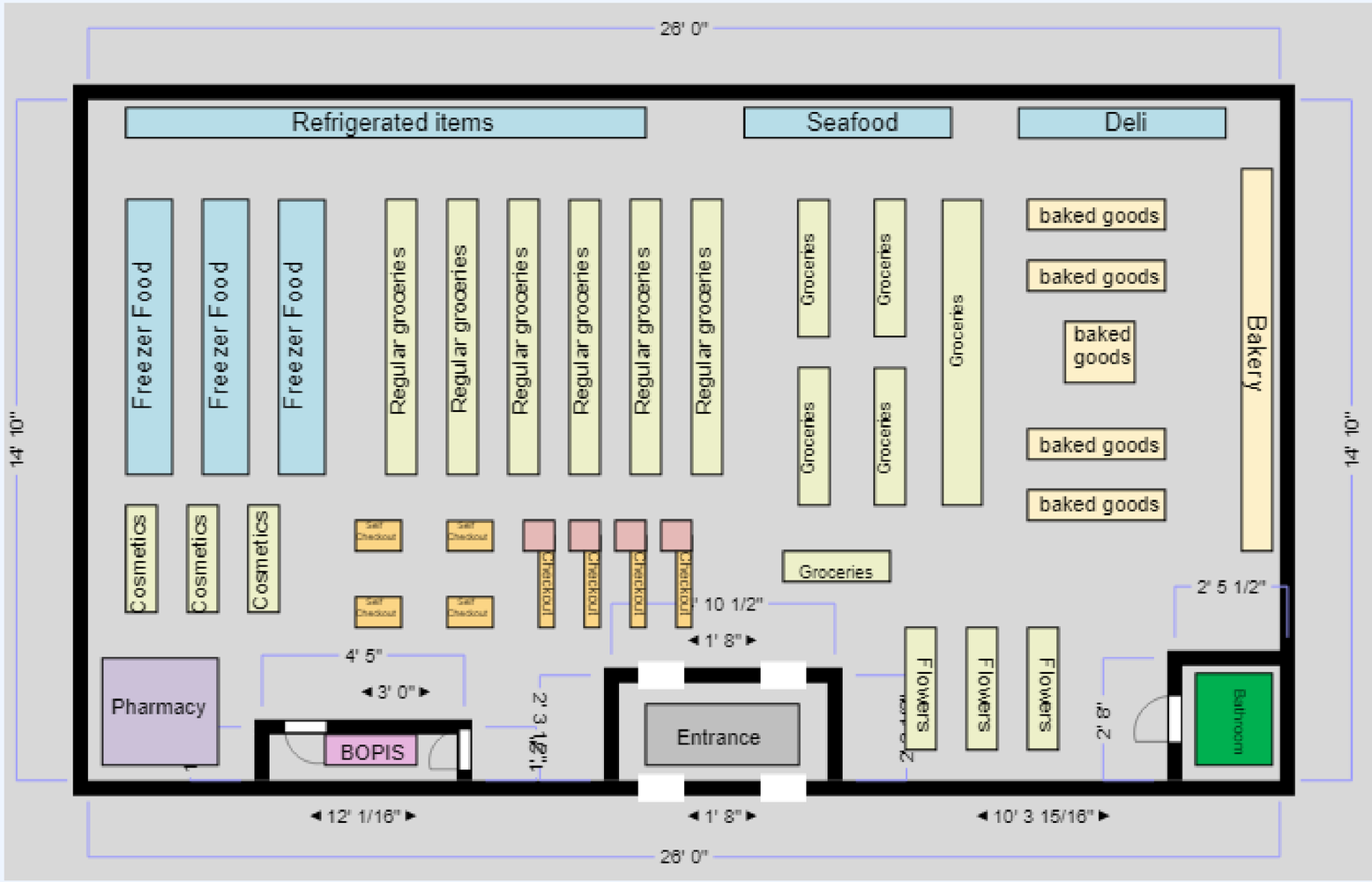


KroGo Process

Layout

The layout does not differ from a regular grocery store. The only change is the use of the smart cart as a form of checking out rather than a checkout kiosk.

Traditional Kroger Store Layout



Metrics

Kroger's innovation and push toward its KroGo process impacts time in-store by integrating checkout into the rest of the shopping process. As shoppers select items and put them in their cart, they are simultaneously checking those items out. This impacts time in store, by reducing checkout time by 3.5 minutes on average. As stated in the Opie case, the average number of items purchased in a shopping trip is 15 and the average transaction time is 14 seconds per item for a total of 3.5 minutes eliminated from the checkout process. It also results in a decrease in product handling of three actions. Dependence on associates decreases because it eliminates the need to interact with an associate at checkout (-1)

Δ -3.5

Δ -3

Δ -1

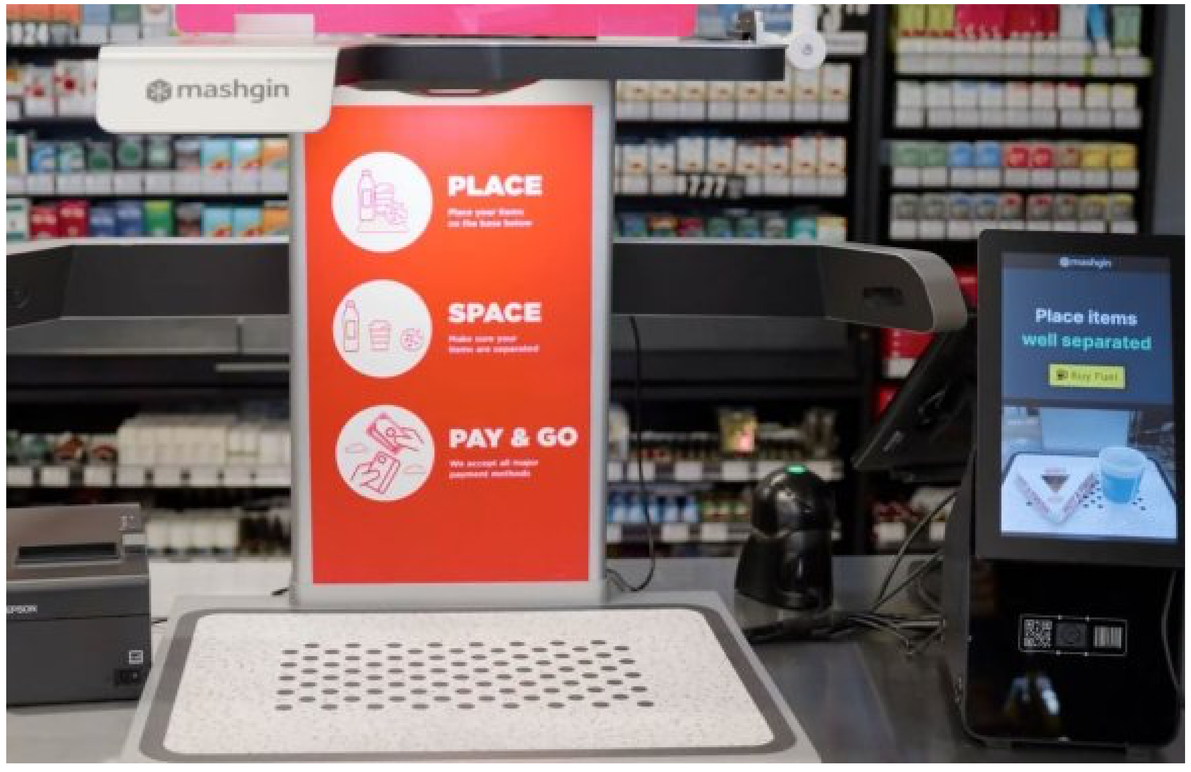
Conclusion

The DART Group found that this new way of shopping and checking out cuts down time spent in store, elevates customer independence, and eliminates checkout at kiosk. Our team concluded that using the smart carts is more efficient than a regular shopping experience.

Computer Vision Checkout

Explanation of New Technology

Mashgin Touchless Checkout System,
branded as “Smart Checkout,”
is one of the largest-scale expansions of
AI-powered checkout technology to date.
This new technology elevates customer
experience, reduces checkout time, and
decreases employee contact with
customers and merchandise. This is a
revolutionary way of checking out and
improves the self-checkout experience.
This technology has been deployed at
Circle K.



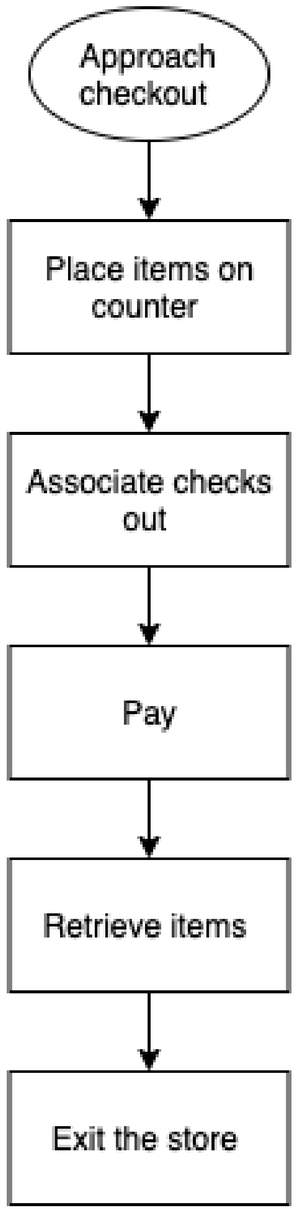
Process

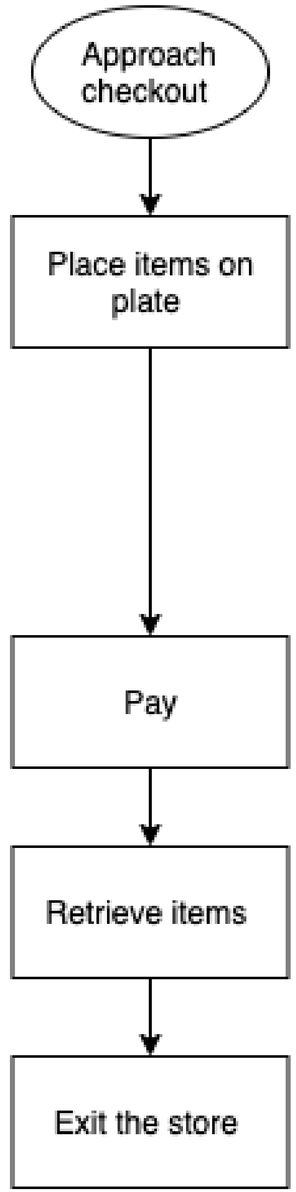
The process is very simple: customers shop, come to self-checkout, place items on the plate, then checkout as they normally would. The Mashgin Touchless Checkout System uses cameras to ring up everything in under a second. If the item is not recognized, there is a scanner beside the compact countertop as a backup option. There is no need to download an app or find and scan barcodes; shoppers simply put items down, pay as they normally would, and are on their way in as little as 10 seconds – eight times faster than traditional self-checkout.

Place item on checkout system

Pay as you normally would

Traditional Checkout

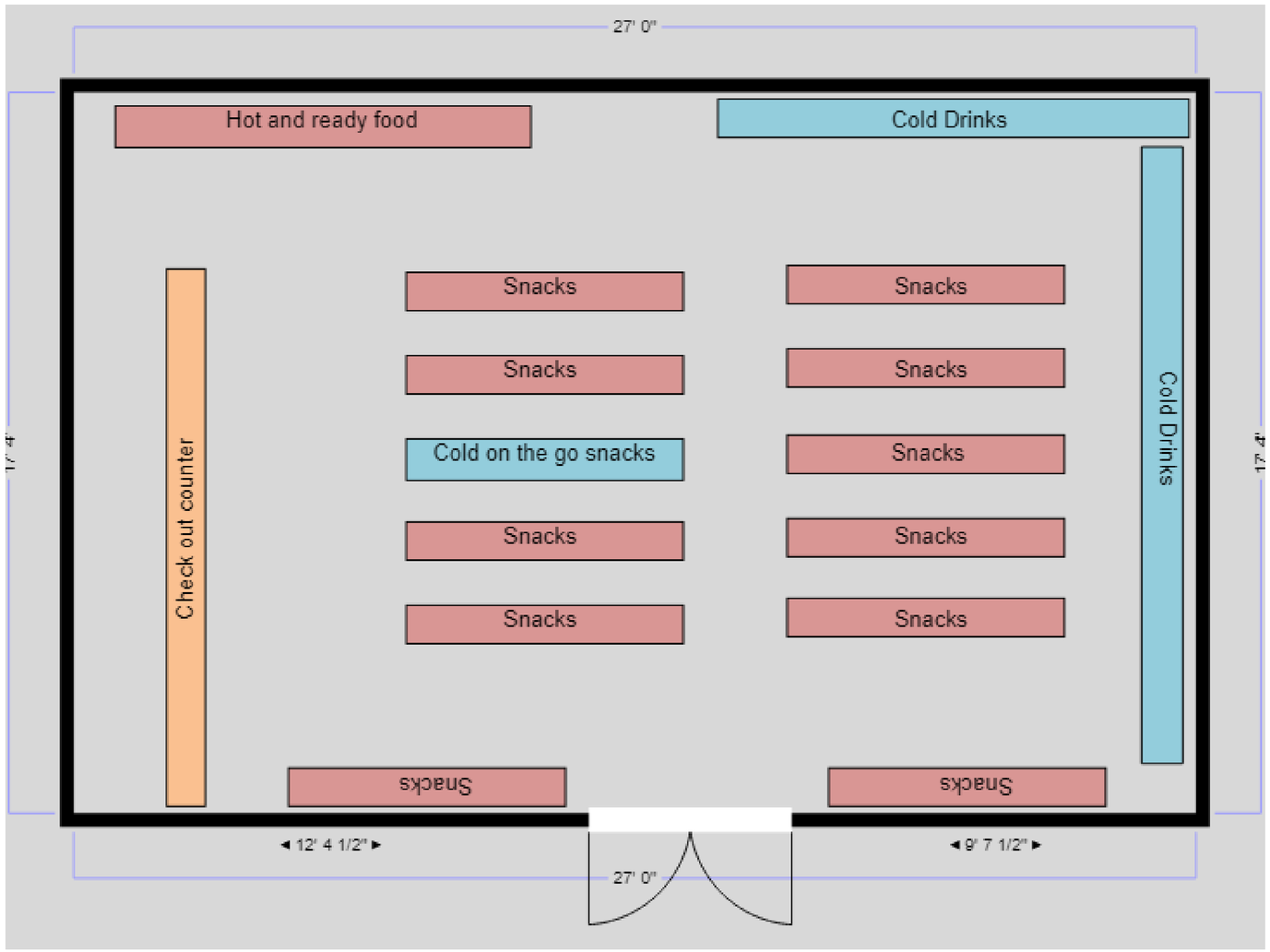




Circle K Smart Checkout

Layout

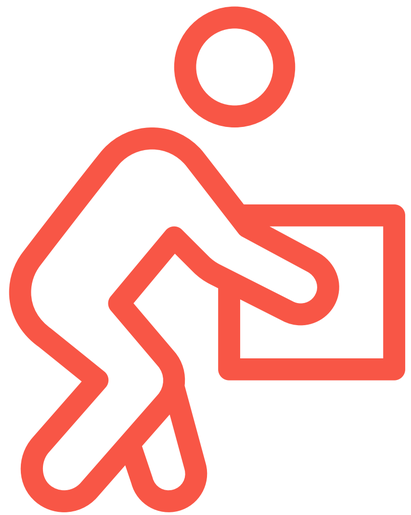
This checkout system is a compact countertop device. This device fits easily on existing counter checkout space. The store layout does not change from the original layout.



Metrics

Circle K's Smart Checkout decreases time in-store by providing a more efficient checkout experience. The DART Group visited a Circle K location and purchased items using traditional checkout and then used the Smart Checkout. It reduced an already efficient shopping journey from 4 minutes to 2.58 minutes, resulting in a delta of 1.42 minutes. Unlike many of the other cases, product handling is not significantly impacted. By eliminating the need for a cashier to manually check out items it reduces dependence on employees by one action and creates a more autonomous experience.

Δ 1.42



Δ 0

Δ -1

Conclusion

Circle K's Smart Checkout improves customers' experience and is a noteworthy innovation of 2022 and 2023. Using this new technology, The DART Group found that the technology optimizes the customer experience while increasing efficiency for employees and customers alike.

Amazon Style

Explanation of New Technology

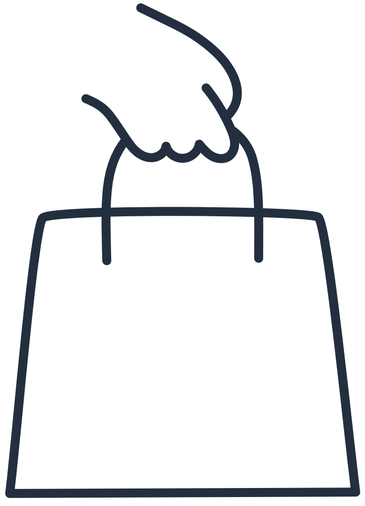
Amazon has opened a new concept store called Amazon Style. The store provides an easier, more efficient way of shopping. This Amazon Style store leans heavily on Amazon's technology. With this concept store, they are looking to reduce clutter and overstocking of goods on the floor.

Process

Rather than having a cluttered, overstocked store, shoppers use their Amazon app to scan an item's QR code, then request the size and color of their item and have it sent to a fitting room. Once in the fitting room, customers use a touch-screen device to request new items, alternative sizes or colors, and send desired items to checkout. Customers then proceed to checkout where they utilize their Amazon account to purchase desired items.

Use your phone to scan QR codes
Select your preferred size and color.

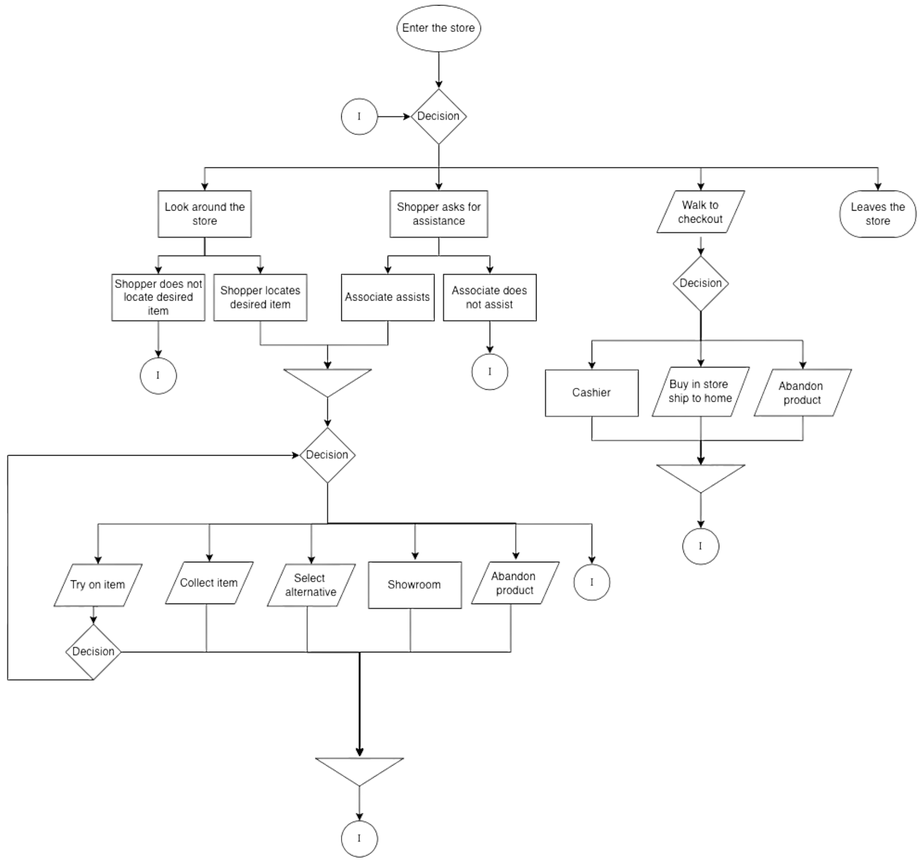
Send to styling room...
Try on, rate, and request more items.

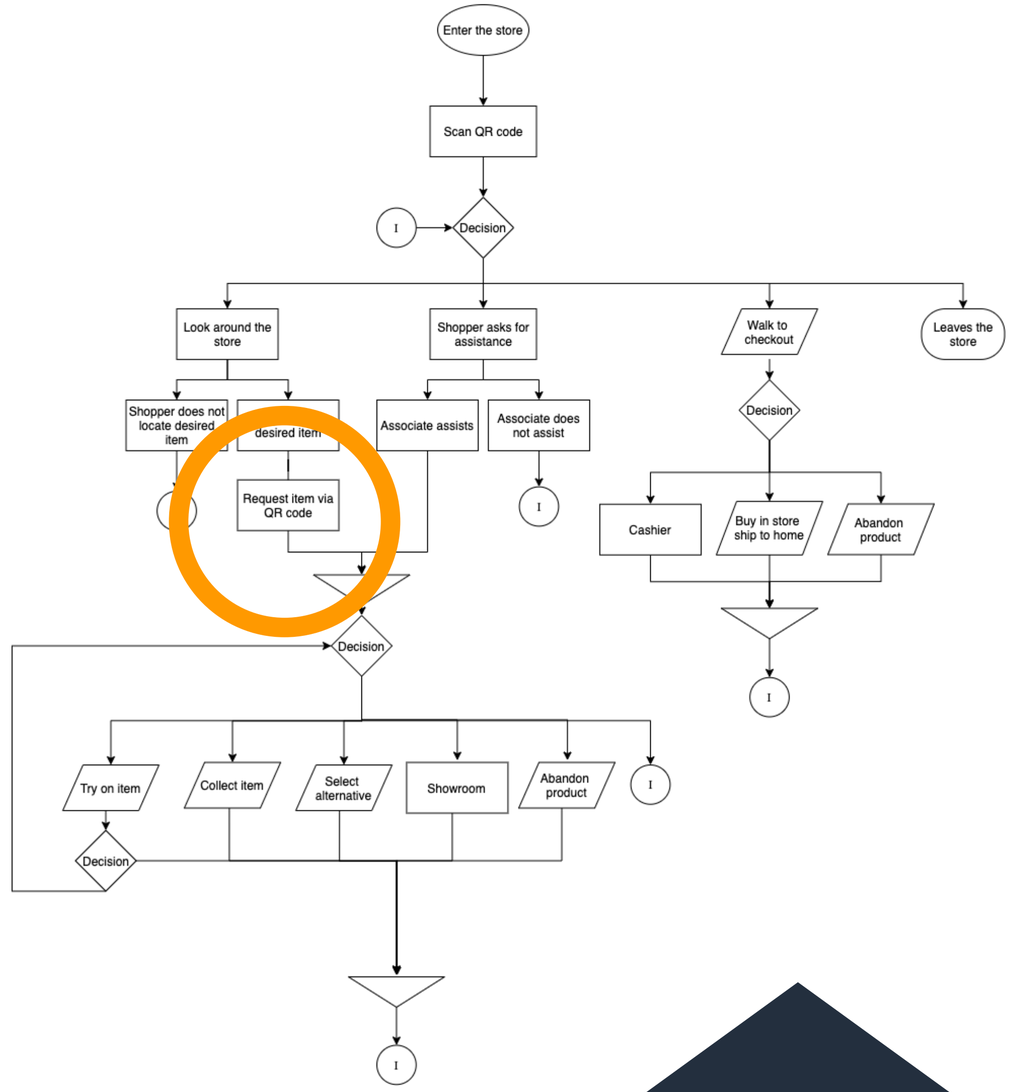


...or straight to Pickup
For when you don't need to try on.

Finish up at Checkout
Payment is easy with your Amazon account.

Traditional Shopping



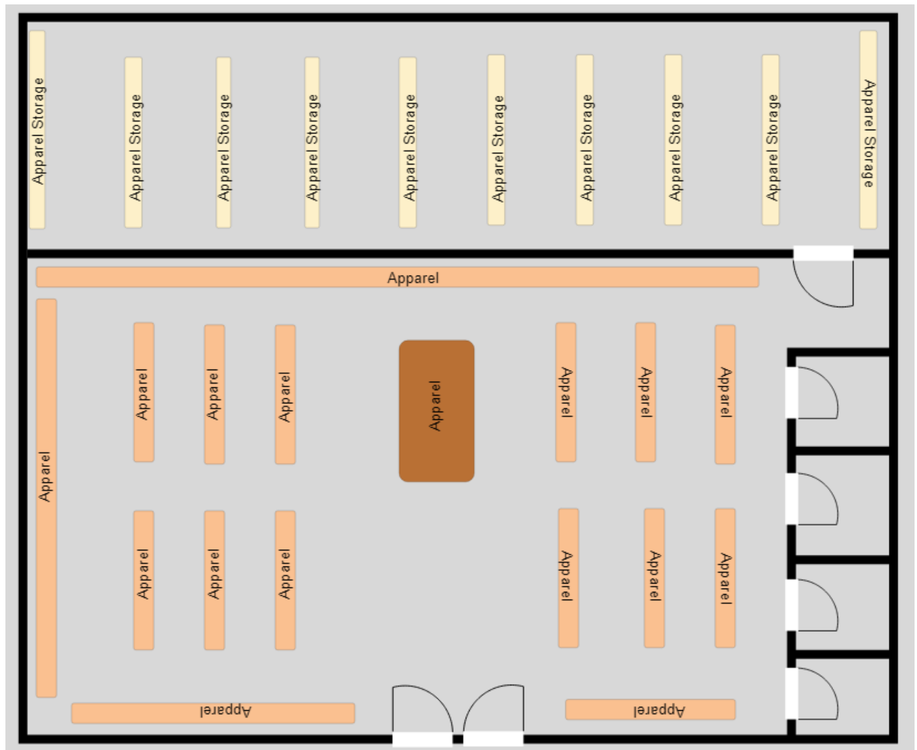


Amazon Style

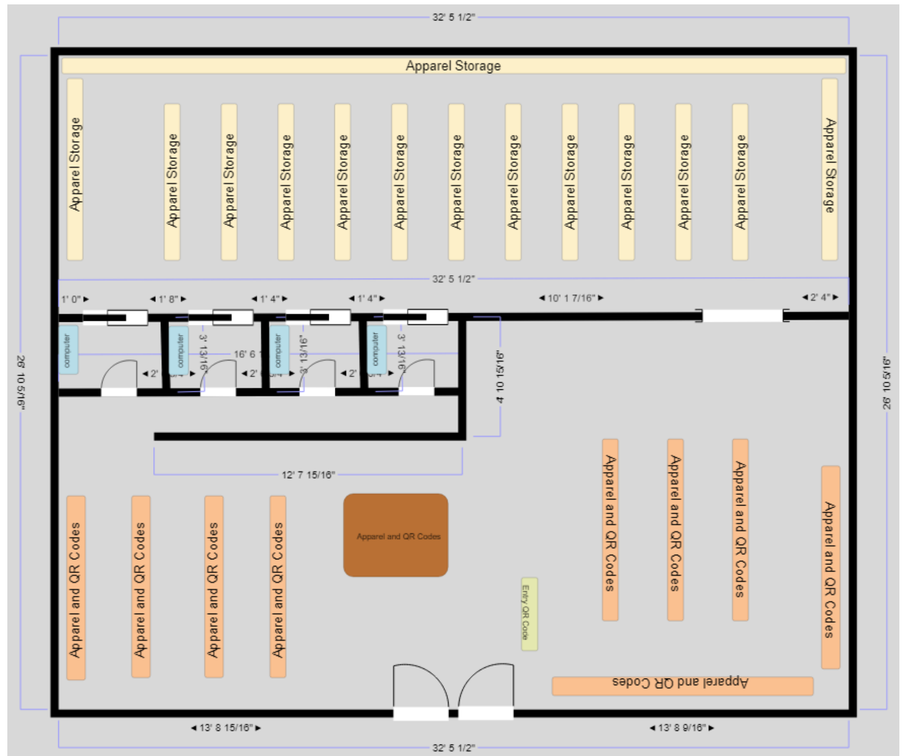
Layout

There are a few key layout shifts for Amazon Style stores. There is only one item per style on the floor. The rest of the merchandise is in the back of house (BOH). Additionally, dressing rooms are connected to the BOH so that associates can place requested merchandise in fitting rooms.

Traditional Shopping Layout



Amazon Style Shopping Layout



Metrics

It is hard to quantify the impact on time in store for the Amazon Style store. It depends on the customer, their shopping patterns, or how they plan on utilizing the innovations in the Amazon Style store. Based on research, The DART Group believes time in store would generally increase as it takes 5-9 minutes for the associate to pull items for a dressing room. In this case, that is actually a good thing because it keeps the customer browsing and potentially grows their basket size. Product handling is impacted by up to six units at a time, as the responsibility of carrying clothes around the store and stocking dressing rooms has been handed off to the associate. Product touch points decrease by up to six as that is the common number of items allowed in a fitting room at one time. There may be some variation on this exact number. Dependence on the associate also increases by one unit as they have a new task that the customer previously was responsible for.

Δ 5-9

Δ->6

Δ1

Conclusion

Amazon Style innovates the traditional shopping process. The implementation of technology allows for a more seamless in-store process, creating an enjoyable and easy experience for customers.

CONTRIBUTORS

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ABOUT THE RFID LAB

The Auburn University RFID Lab is a research center that focuses on the business case and technical implementation of emerging technologies in the retail, aerospace, pharmaceutical, and manufacturing industries. Since its inception in 2005, the RFID Lab has conducted a series of seminal business value studies that have led to the adoption of RFID and other IoT technologies. Sponsors of the RFID Lab include Avery Dennison, Boeing, Checkpoint, Delta Air Lines, FedEx, GS1 US, Hanes Brands, Kohls, McDonald's, Nike, NXP, PVH, Sensormatic, SML, Tageos, T-Mobile, Walmart, and Zebra Technologies. If you would like to connect with the Auburn University RFID Lab, please contact Justin Patton at rfidlab@auburn.edu or 334-734-4034.