

Survey of Checkout Solutions

Solutions	Cashier + Register (Baseline)	Mobile App & Customer Scanning	Handheld Scanners	FocalScan	Self Checkout Machine	Tap and Go	Scan Tunnel	Click and Collect	Amazon Go - Style
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Description

Traditional checkout process

An app that allows customers to scan each product as they shop and complete transaction through dedicated checkout machine or audit.

A handheld barcode scanner that allows customers to scan products as they shop. Customer either uses a credit card to checkout the device or the solution is paired with a SCO to finalize the transaction. Both of these processes require frequent audits.

Cameras that retrofit a conveyor belt and automatically detect each item (barcode and non-barcode) through product recognition. Rather than scanning each item or PLU each non-barcode item, the associate focuses on bagging and payment tender to accelerate transaction speed.

Self service kiosk for customer to complete transaction by scanning each item and bag / pay.

Electronic Price Tags with NFC that allow customers to tap their phone, edit the quantity number and allow the customer to just walk out.

A large tunnel that replaces a checkout lane and allows customers to place their products into a staging area, the conveyor belt funnels all the products through, and either by computer vision or barcode reading, detect the quantity and UPC of each product, including potentially non-barcode items. An auditor or 2 are usually present as well.

Customer orders product online, store associates pick every item they ordered, and then customer picks it up at a parking spot or designated area outside the store.

A set of cameras that can recognize each product a customer grabs and associate it to that persons account allowing the customer to checkout without any friction, they just walk out.

Challenges

Labor intensive

Low utilization. Poor customer experience. Increased shrink

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Need to maintain accurate computer vision models

Low customer adoption when basket includes keyed entry items. Increased shrink from mis-selection and sweethearting.

Low utilization. Poor customer experience. Increased shrink

Slows transaction speed

Labor intensive

Not scalable for large format stores

Transaction Time

30
transactions per hour

50
transactions per hour

50
transactions per hour

50
transactions per hour

22
transactions per hour

∞
Infinite (only limited by store capacity)

20
transactions per hour

∞
Only limited by available space and labor

∞
Infinite (only limited by store capacity)

Utilization

100%

5%

5%

100%

100%

5%

100%

10%

100%

Reduction in Mis-scan



Reduction in Shrink



Upfront investment

\$

\$

\$

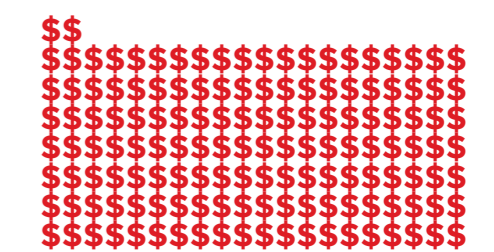
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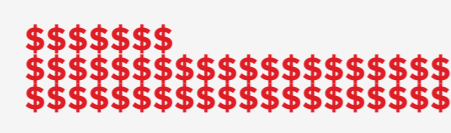
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Total 5 year cost of operation (electricity, audit, labor)



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Annual Cost of Shrink



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Annual Savings Over Register + Cashier (Baseline)

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Payback period (months)

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32.01

238.36

1.05

12.45

6,813.43

26.30

never

never

\$ = \$100,000