Mobile Self-Scanning and Checkout-Free 2021

Executive Report and Market Database

May 2021

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RBR's brand new study of self-service shopping technologies addresses the current lack of data on this dynamic market

A dynamic market for advanced self-service shopping technologies is developing

- Consumers expect convenient, personalised and speedy shopping experiences
- To match innovators, retailers need to reduce friction from in-store checkout
- A diverse range of technologies have been developed to obviate the end-of-shop scanning process, but capabilities and scale of deployment vary dramatically

Technology vendors and other industry stakeholders need intelligence on this market

- Understand international market context, and identify future opportunities
- Benchmark vs. competitors in key geographic and market segments
- Provide authoritative, independent substantiation of presence in marketing collateral

Mobile Self-Scanning and Checkout-Free 2021 provides suppliers with the first comprehensive view of projects around the world

Scope	
Products	**Mobile Self-Scanning** and **Checkout-Free** technologies More details on page 4
Geographies	**Global data** including figures for **23 country markets** More details on page 5
Metrics	Number of **stores**, number of **devices**[1]
Data	**Market size** and **vendor shares**, end-2020
Segmentation	**Size** of stores: micro (<500 sq ft), small (500-5k sq ft), medium/large (>5k sq ft)
Vendors	**60+** across **checkout-free** technology, mobile self-scanning **software** and **hardware**, including AiFi, Amazon, BudgetBox, Caper, Datema, Datalogic, Re-Vision and Zebra

[1] For projects with retailer-owned self-scanning devices

The study addresses technologies that move data capture away from a final "checkout" process

<table>
<tr><th colspan="4">Product Scope</th></tr>
<tr><th>Dimension</th><th colspan="2">Included</th><th>Excluded</th></tr>
<tr><td>Industry</td><td colspan="2">▸ Retail: self-service product selection in a store</td><td>▸ Vending: self-service product selection at a stand-alone machine
▸ Hospitality: self-service or assisted-service ordering; employee fulfilment</td></tr>
<tr><td>Data Capture</td><td>▸ Actively – by consumer
▪ Mobile self-scanning using retailer- or customer-owned device
▪ Alternatives e.g. NFC shelf labels</td><td>▸ Passively – by technology
▪ Using any combination of cameras and other sensors (e.g. weight)
▪ Whether at store, shelf, cart or basket level</td><td>▸ Requiring employee re-scanning of some/all items for every customer</td></tr>
</table>

The study provides global data, including figures for 23 country markets

Americas
- USA
- Brazil
- Canada
- Chile
- Others

EMEA
- France
- Germany
- Italy
- Netherlands
- Poland
- Russia
- Spain
- Sweden
- UAE
- UK
- Others

Asia-Pacific
- Australia
- China
- India
- Japan
- Singapore
- South Korea
- Others

The study combines primary and secondary research with RBR's in-house data, market understanding and research expertise

Collect

Data gathered from technology suppliers

- Information collected from international and domestic suppliers alike
- Primary data complemented with secondary research where appropriate
- 60+ vendors identified

Validate

Accuracy of data verified using variety of sources

- Vendors e.g. press releases, annual reports, stock exchange filings
- RBR retailer databases e.g. store networks
- Industry and mass media (websites, publications)
- Industry experts

Analyse

Leverage RBR expertise in drawing insights from data

- Data analysed by country, store size etc.
- Commentary delivers key insights on market size and shape
- Analysis of major chains' deployments

Study clients receive an executive report and a comprehensive market database, plus access to RBR's project team

- Printed and electronic (multi-user licence) copies of research findings
  - — Executive report in PowerPoint containing key market facts and commentary by country
  - — Market Database in Excel
- A conference call presentation of the study results can be organised if desired
- Privileged access to RBR's senior researchers during and after study
- The study price is £25,000

If you have questions, or to place an order, please contact
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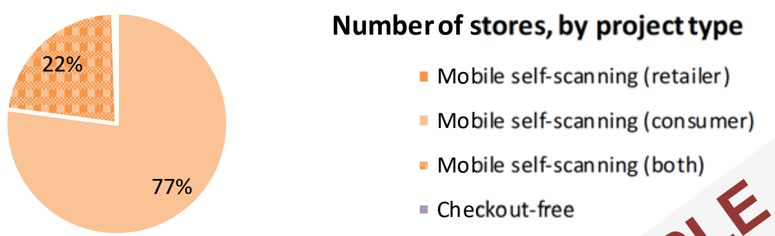
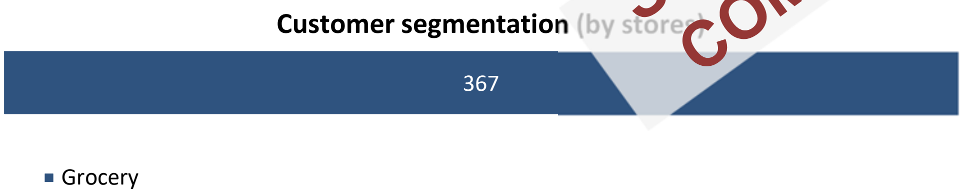
The Polish mobile self-scanning market is in its infancy, with two major chains deploying the technology

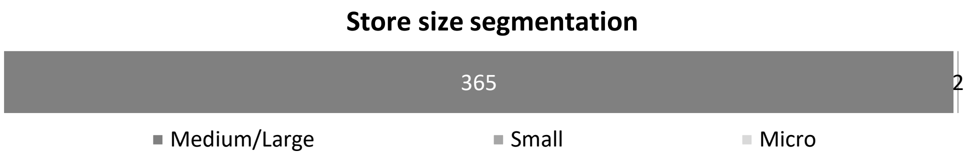
Market Status, end-2020

	# Retailers	#Stores
Mobile Self-Scanning	2	365
using retailer devices	1	82 (6,150 devices)
using consumer devices	2	365
Checkout-Free	1	2



Customer and Store Size Segmentation





Key Insights

- At the end of 2020, 365 stores in Poland, operated by two major grocery retailers, offered mobile self-scanning to customers
- The majority of stores allow customers to scan items with their own smartphones
- Carrefour and Tesco are the two participants in the nascent Polish mobile self-scanning market
  – Carrefour, which operates around 900 stores in Poland, was the first retailer to launch this service in 2017
  – Customers can choose to pay in cash after having scanned items using their smartphone
- Tesco customers in Poland can use either retailer-provided devices or their own smartphones
  – Around half of Tesco's nearly 330 stores offer some form of mobile self-scanning
  – A larger number of stores allow scanning of items through consumer's devices than retailer-provided ones
  – The same software application is used at Tesco stores in Czechia, Slovakia and Hungary
- As of end-2020, no other major Polish retailer operated live stores with mobile self-scanning
- Zabka, which operated more than 5,000 small-format grocery stores in Poland, has opened two checkout-free outlets
- The technology in these stores is provided by California-based firm AiFi
  – It is envisaged that more stores from this retailer and its franchisees will feature the technology in future

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The Market Database provides comprehensive market and vendor data by country, including store and device numbers

MOBILE SELF-SCANNING AND CHECKOUT-FREE 2021

Mobile Self-Scanning Software Stores - by Vendor, Region and Country, end-2020

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Region	Country	Total	BudgetBox	Datema	FutureProof	[illegible]	[illegible]	NCR	Re-Vision	Skip	Toshiba
Americas	Canada	xxx			xx			xx			xx
Americas	USA	x,xxx			xxx		x	xxx		xxx	xxx
Americas	Brazil	xxx									
Americas	Chile	xx									
Americas	Other	xx					x				
Americas	**Total**	**x,xxx**					**x,xxx**			**xxx**	**xxx**
Europe, Middle East and Africa	France	x,xxx	x,xxx						xxx		x
Europe, Middle East and Africa	Germany	x,xxx		xx		xxx			x		
Europe, Middle East and Africa	Italy	x,xxx					xx				
Europe, Middle East and Africa	Netherlands	x,xxx		xx			xx		xxx		
Europe, Middle East and Africa	Poland	xx				x					
Europe, Middle East and Africa	Russia	[illegible]				xx	xx		x		
Europe, Middle East and Africa	Spain	[illegible]					x				xx
Europe, Middle East and Africa	Sweden	xxx		xx			x				
Europe, Middle East and Africa	UAE	xx									
Europe, Middle East and Africa	UK	x,xxx					xx		xxx		x
Europe, Middle East and Africa	Other	xxx			x				xx		
Europe, Middle East and Africa	**Total**	**xx,xxx**	**x,xxx**	**xxx**	**xxx**	**xxx**	**xxx**	**xxx**	**x,xxx**	**xxx**	**xxx**
All Regions	**Total**	**xx,xxx**	**x,xxx**	**xxx**	**xxx**	**xxx**	**xxx**	**xxx**	**x,xxx**	**xxx**	**xxx**

RBR has deep retail industry knowledge, researching a range of store technologies including an annual study of the global self-checkout market

Key Qualifications	Types of Client
▸ 30 years' experience delivering international market research to diverse blue-chip client base ▸ Expertise in studies of hardware, software and services ▸ Carrying out annual study of global market for self-checkout hardware since 2008 ▸ Strong understanding of general and technology trends in the retail industry ▸ Reputation for premium, independent syndicated research studies funded by industry suppliers	**Technology suppliers** e.g. Diebold Nixdorf, Fiserv, Fujitsu, HP, IBM, Microsoft, NCR, Toshiba, Zebra **Retailers** e.g. Auchan, X5 Retail **Payments firms** e.g. American Express, Mastercard, PayPal, Visa **Consultancies** e.g. Bain & Company, Boston Consulting Group **Investment banks and investors** e.g. Advent International, Elliott Management, Goldman Sachs