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Technology Leadership Summit

The Future of Retail – What will Retail look like in 2020 and what does the CIO need to do about it?

FMI THE VOICE OF FOOD RETAIL

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Planet Retail

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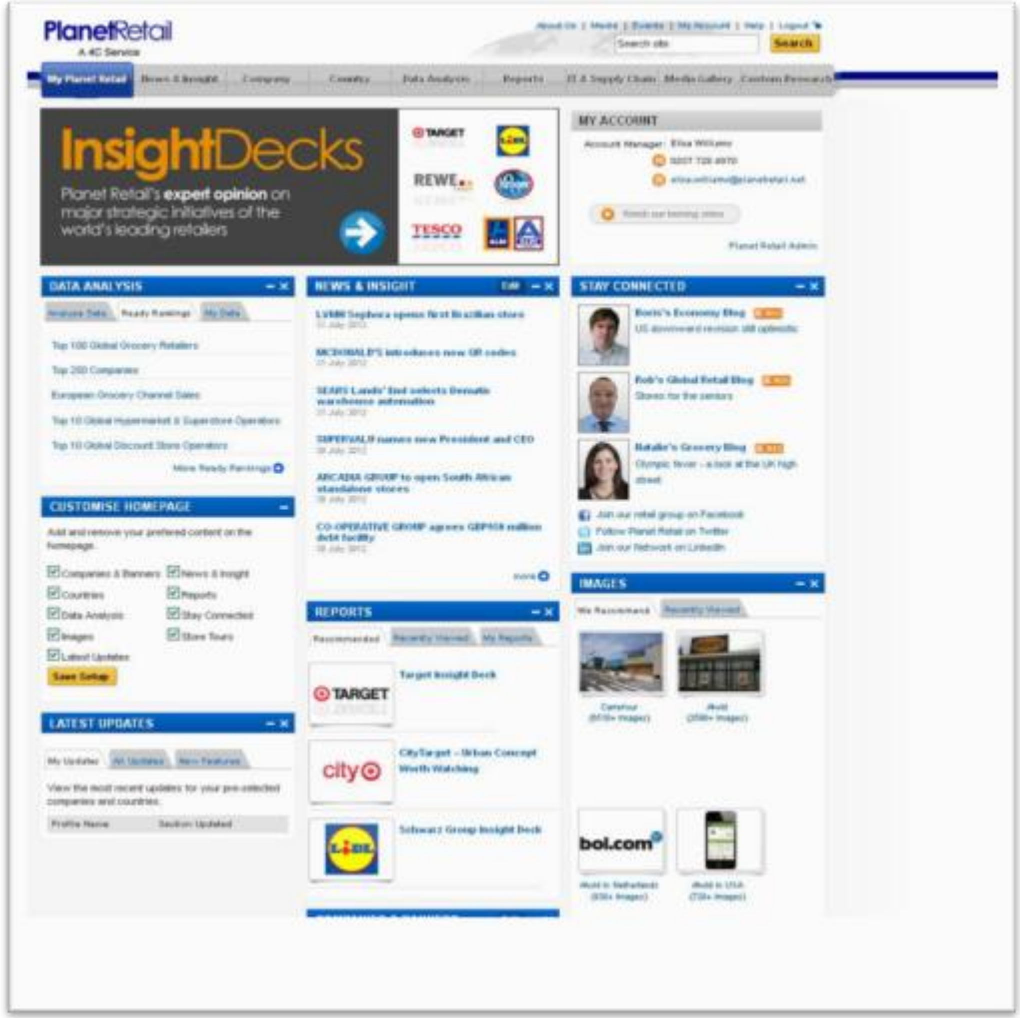
About Planet Retail

Planet Retail …

- provides retailers, suppliers and investors with critical insights on the global retail industry that create competitive advantage
- offers macroeconomic data and analyses for 211 countries
- monitors more than 9,000 retail and restaurant operations
- delivers daily news, a weekly magazine, reports, executive opinion briefings and webcasts



Continually updated by our global team of analysts

Sample of Planet Retail Clients

Arla Arla Foods
BACARDI
Barilla
British American Tobacco
Cadbury
Carrefour
Groupe Casino
Cisco
Coca-Cola
Colgate
coop
COMMERZBANK
DANONE
DIAGEO
Dr.Oetker
ECKES granini GROUP
EMD
E.&J. Gallo Winery
FERRERO
frieslandfoods
FUJITSU
gsk GlaxoSmithKline
Heineken
Heinz
Henkel
InBev
Les Mousquetaires
INTERSNACK
JERÓNIMO MARTINS
Johnson & Johnson
Kellogg's
KESKO
KIKKOMAN
Kimberly-Clark
KRAFT
LAVAZZA
Lindt
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Manhattan Associates.
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METRO Group
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Assess the US retail landscape state-by-state and identify opportunities with our new US-tailored product

- **Expanded retailer portfolio.** Comprehensive coverage of over 80 grocery and drugstore retailers operating in the US
- **State-by-state analysis.** Featuring new data tailored to local market requirements
- **Enhanced US macro data.** New and improved US country profile and demographics featuring new country and state level data points
- **Our take on the local market.** Enhanced local News & Insight and customized Trend Reports exclusive to Planet Retail 2.0 subscribers

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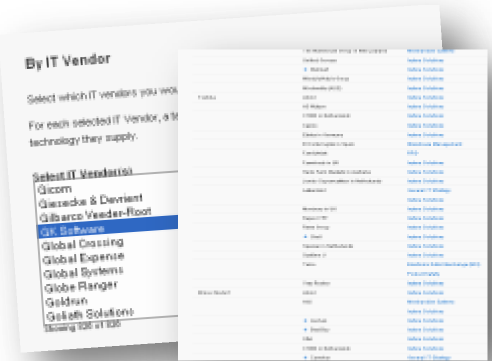
Additional services on Retail Technology

Technology Table

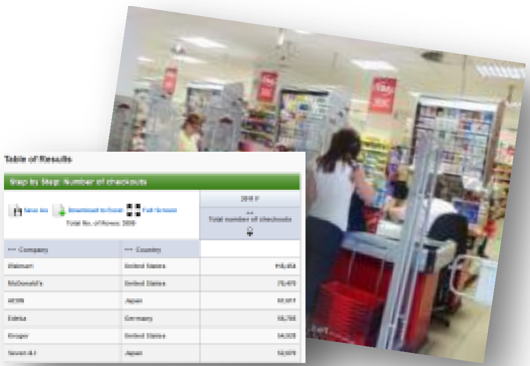


Retail Technology Trend Reports

Semi-monthly IT & SC Newsletter

Market Opportunity Assessments

Number of Checkouts



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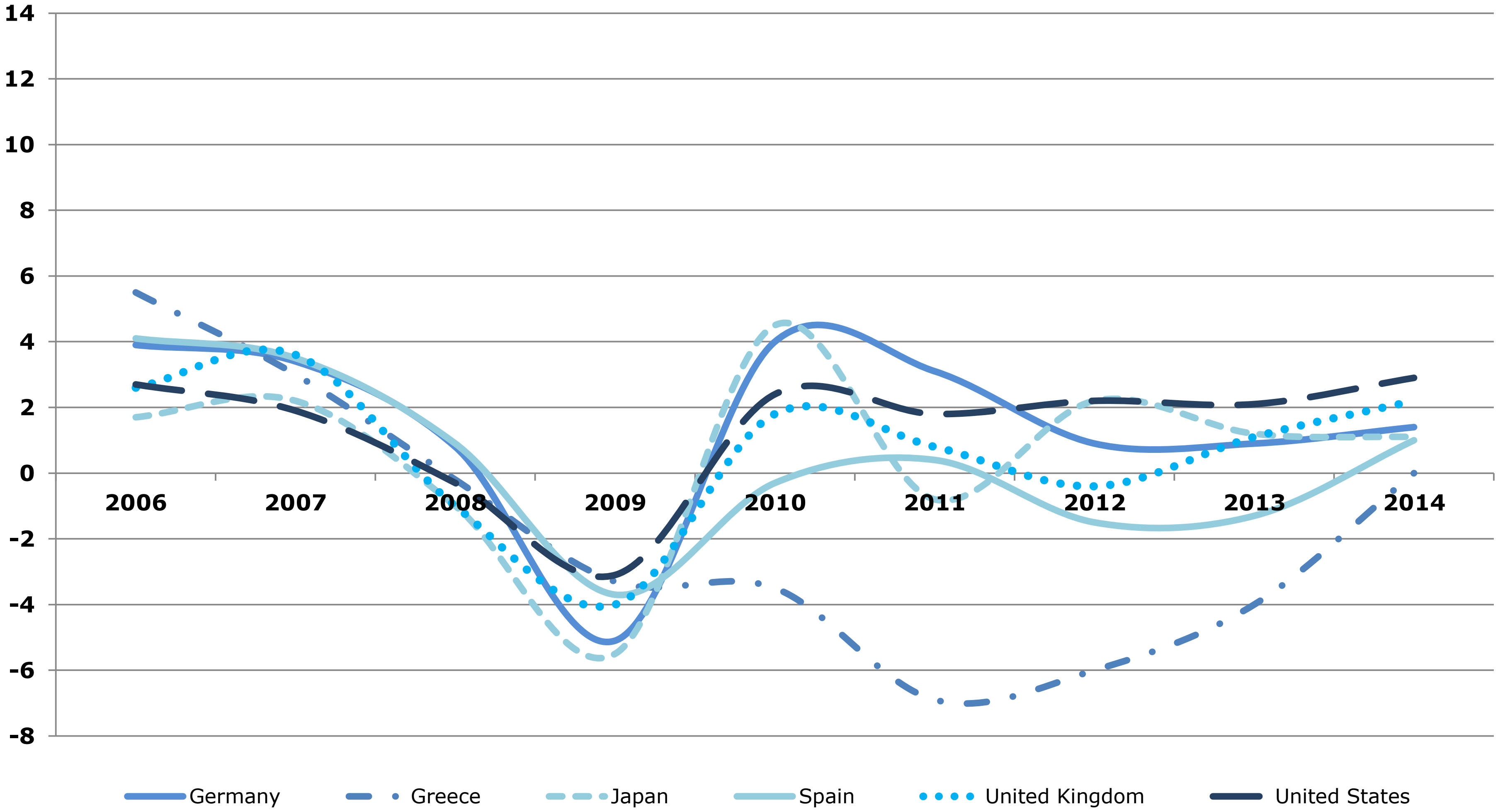
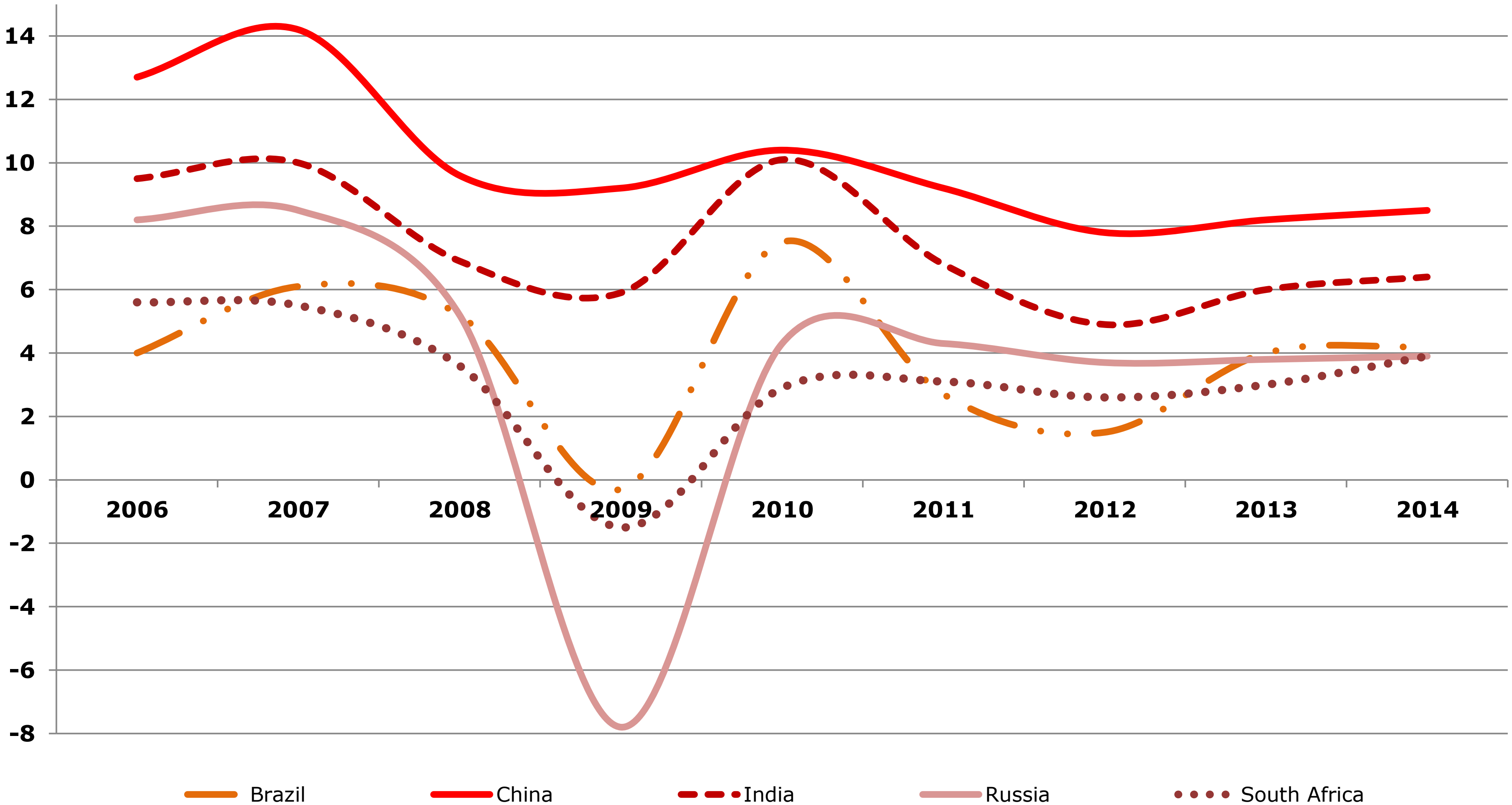
Macroeconomics and channel trends

GDP real growth (in %), industrialised nations, 2006-2014



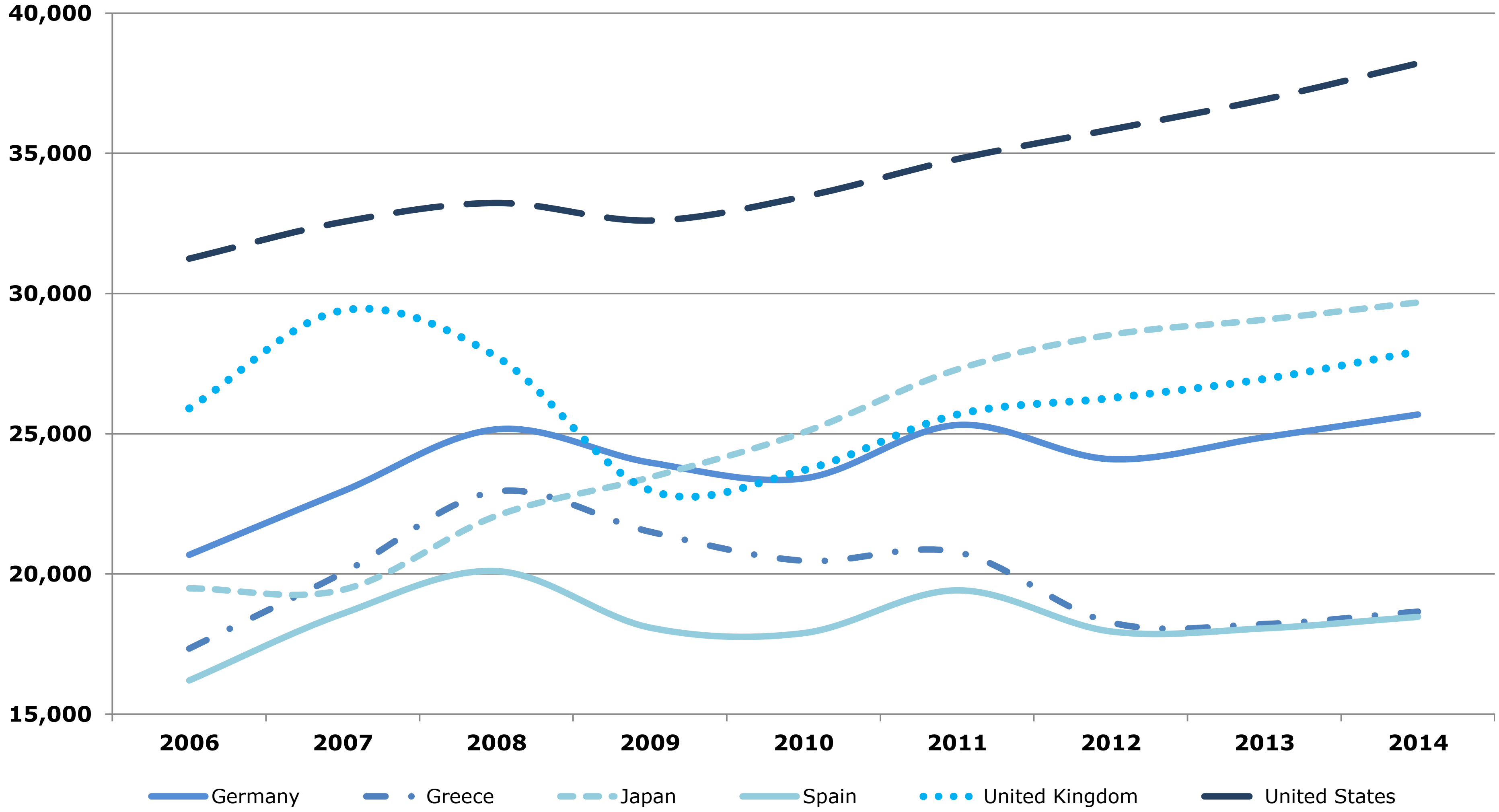
Source: International Monetary Fund (IMF), World Economic Outlook October 2012

GDP real growth (in %), emerging markets, 2006-2014



Source: International Monetary Fund (IMF), World Economic Outlook October 2012

Consumer spending/capita (in USD), industrialised nations, 2006-2014



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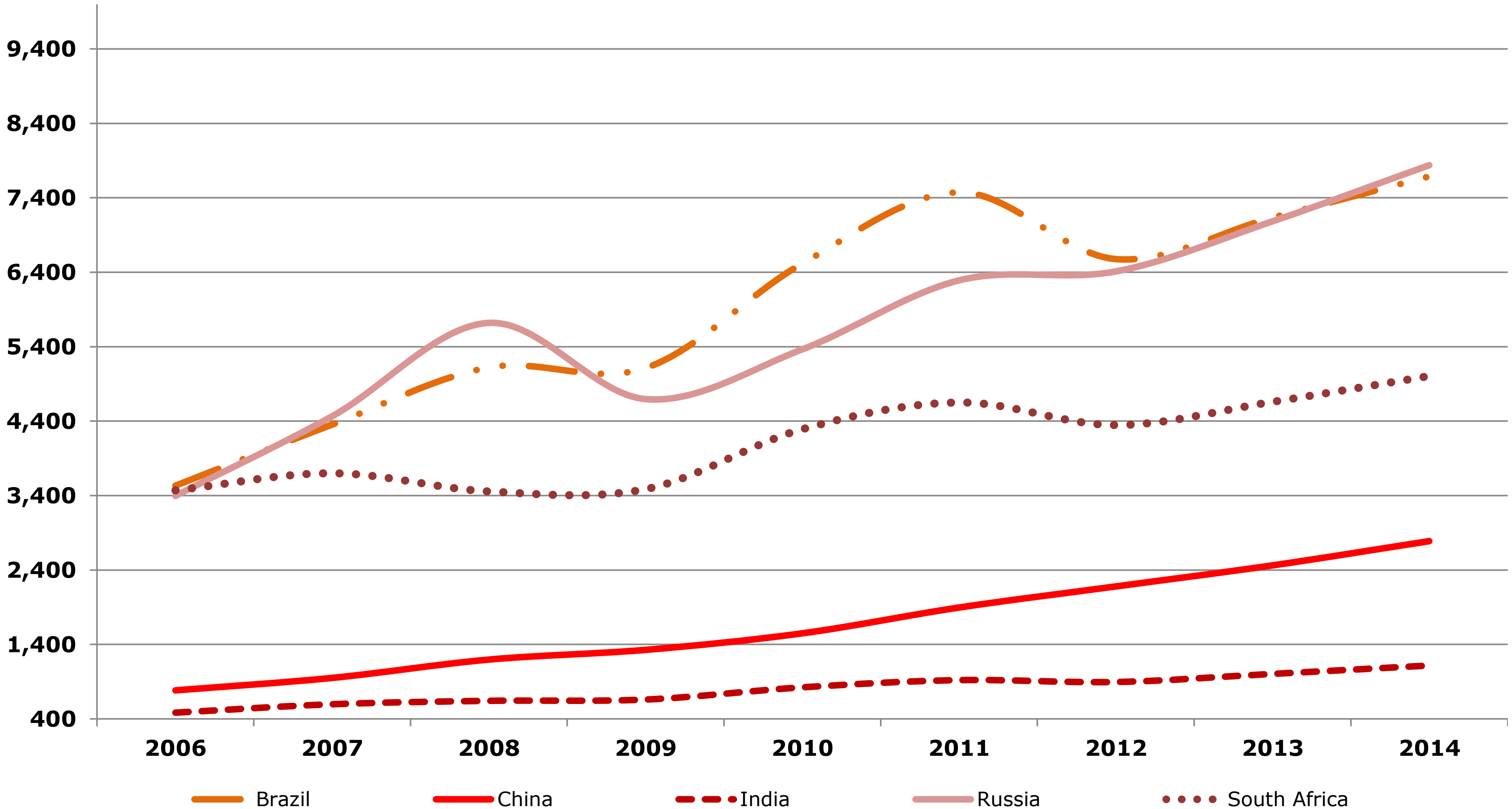
Consumer spending/capita (in USD), emerging markets, 2006-2014

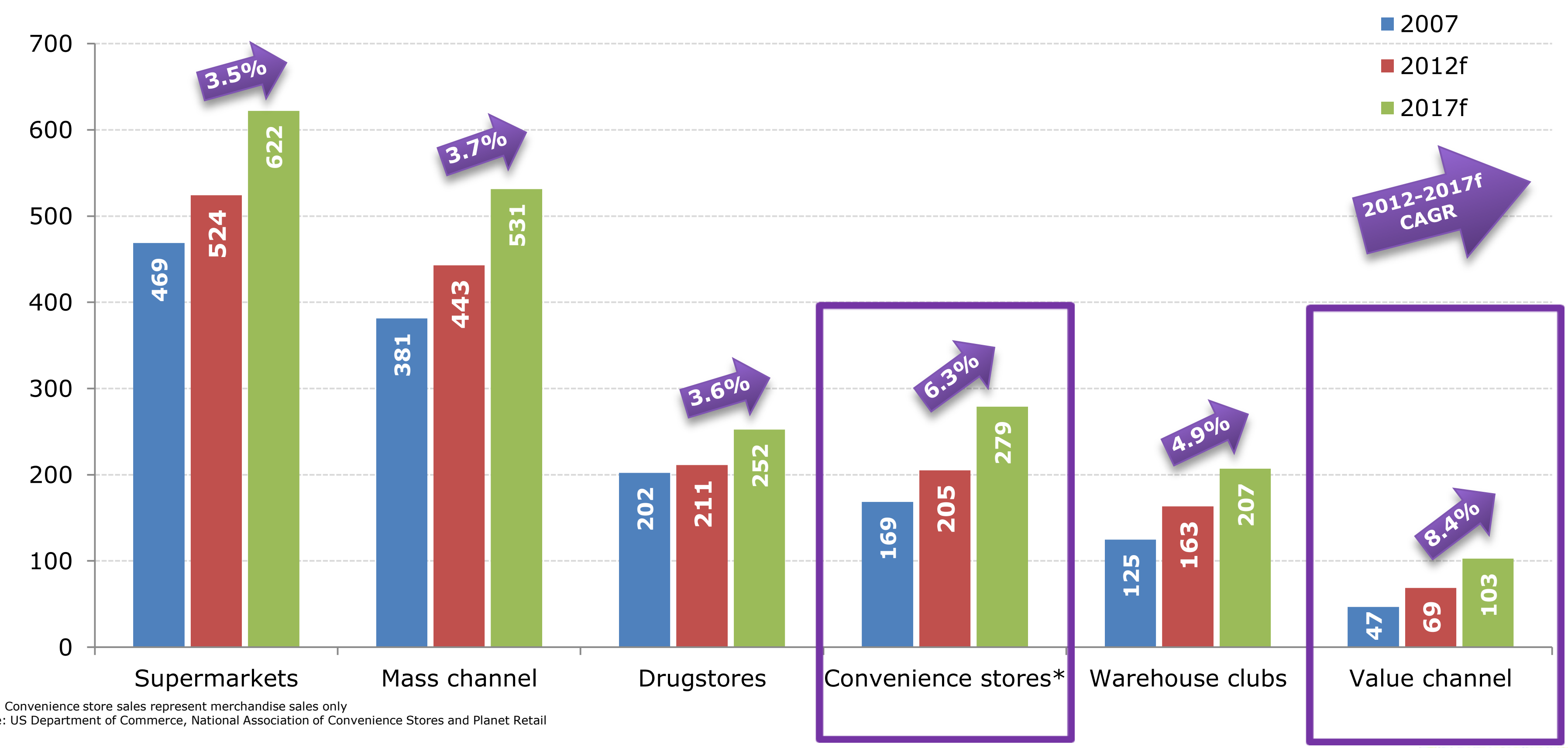


Source: International Monetary Fund (IMF), World Economic Outlook October 2012

Smaller stores on the rise

While sales growth rates for large stores are moderate, convenience stores and the value channel are growing at much faster pace.

US: Channel Sizes by Sales, 2007-2017f (USD bn)



*Note: Convenience store sales represent merchandise sales only
Source: US Department of Commerce, National Association of Convenience Stores and Planet Retail

Big troubles for big-box?

The hypermarket & superstore channel saw the largest decline in market share between 2006 and 2011 and Planet Retail predicts a further fall by 2016.

- The global 'big 3' (Walmart, Carrefour and Tesco) all experienced negative same-store sales declines in key developed markets in 2011 as demand for non-food slowed.
- Planet Retail predicts that Walmart will reach Supercenter saturation in the US by 2020.
- Tesco to cut back on large store investment in UK from 2012 after its heaviest same-store sales decline for years over Christmas 2011.

Walmart is looking to reduce its reliance on Supercenters by embracing a multi-format approach in the US.

"Do you need to build large hypermarkets in the UK when the internet is taking so much growth in [non-food]?"

Philip Clarke
CEO
TESCO

Compact stores offer numerous benefits for the retailer as well as for the shopper.

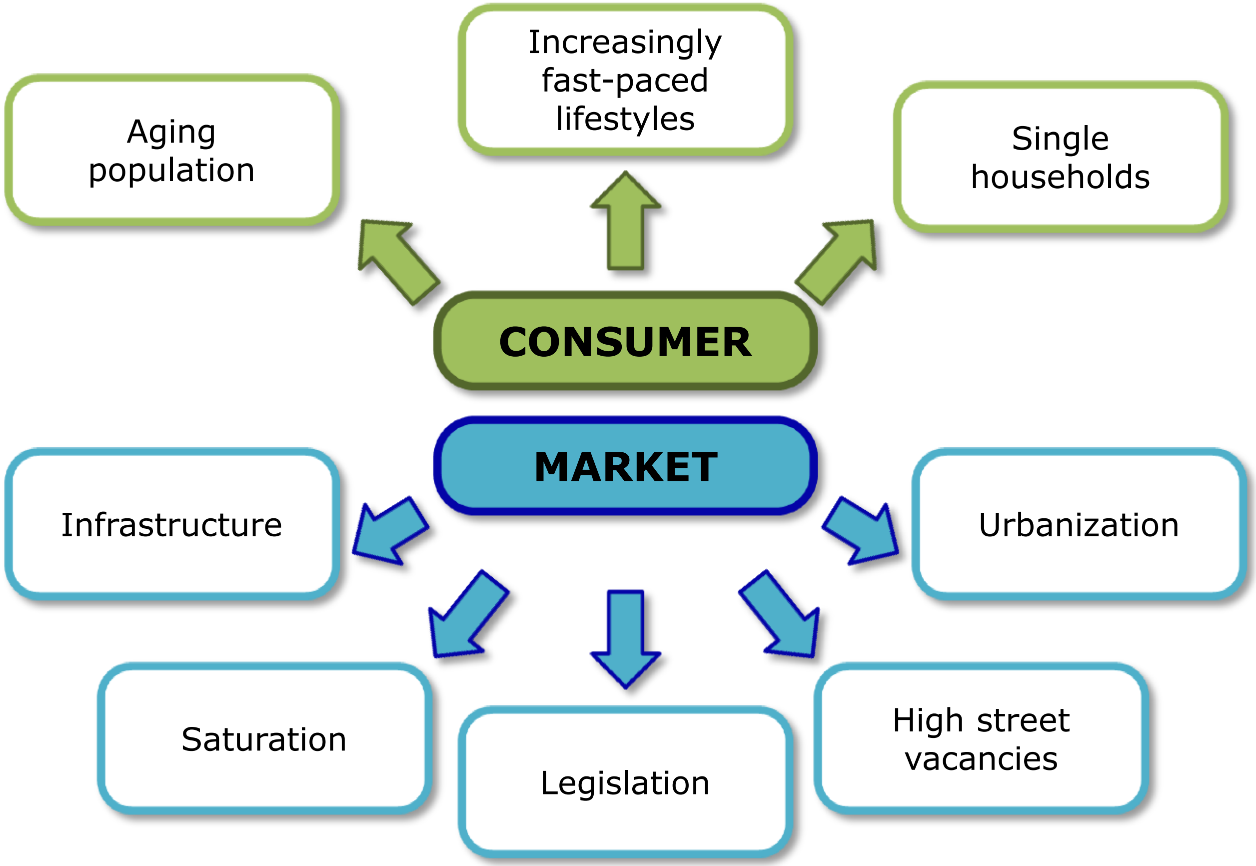
With hypermarkets & superstores in trouble, many leading retailers are now focusing on expanding their small store presence.

- Proximity and convenience
- Time saving
- Opportunity to enter city centers
- Higher flexibility
- "Return on investment is equal to larger Supercenters" (Walmart)
- Reduced stock keeping

Walmart launched its first Walmart Express store in 2011, complete with site to store facilities.

Big troubles for big-box?

The shopper and market is changing in ways that favor small stores and smaller shopping trips over larger store formats.



Polarization – Future growth will come from the poles. Having a USP will be a mandate, otherwise retailers run the risk of being stuck in the middle – and Walmart has the middle ground covered.

Walmart

Value — Middle — Premium/ Niche

Dollar stores
LAG (Aldi)
Discount grocers, i.e.

- Bottom Dollar (Delhaize)
- Food 4 Less (Kroger)
- Joe V (H-E-B)

'Stuck in the middle'

Albertsons
kmart
A&P

Clubs (Costco)
Whole Foods, Sprouts
Premium/fresh, i.e.

- Harris Teeter
- Market District (Giant Eagle)
- Mariano's (Roundy's)

Premium: Supermarkets will leverage compelling points of differentiation – fresh, organic, health & wellness, customer service, shopper solutions – to carve a niche and stand out from Walmart and other market leaders.

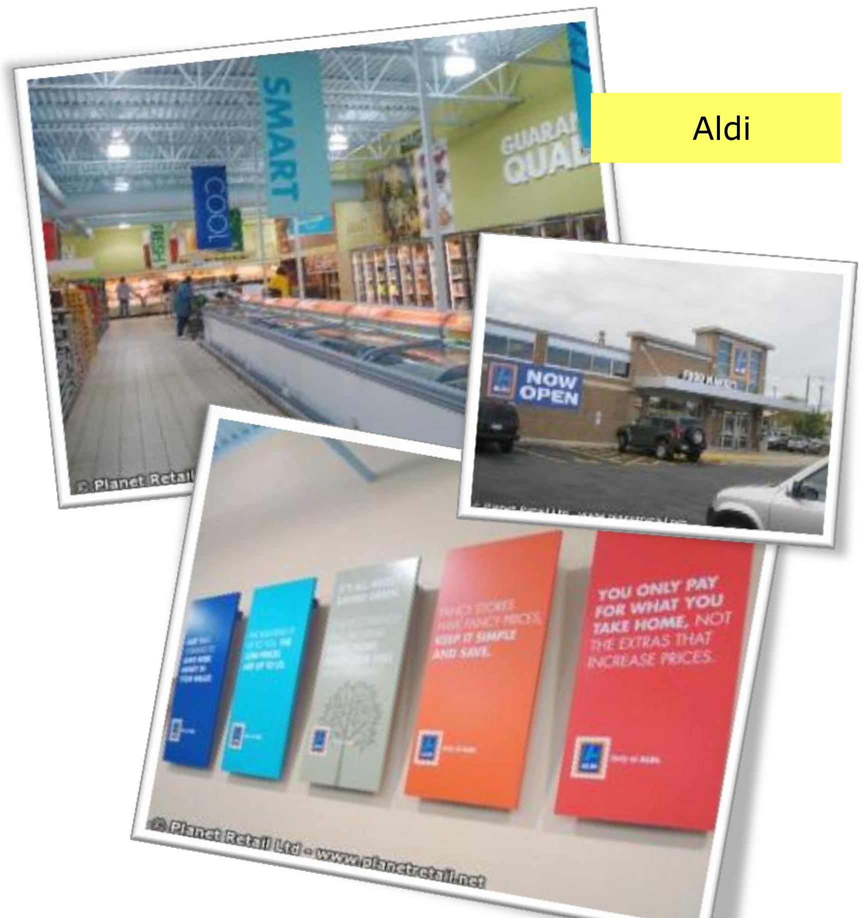
Mariano's
Fresh Market
(Roundy's)

Giant Eagle
Market District

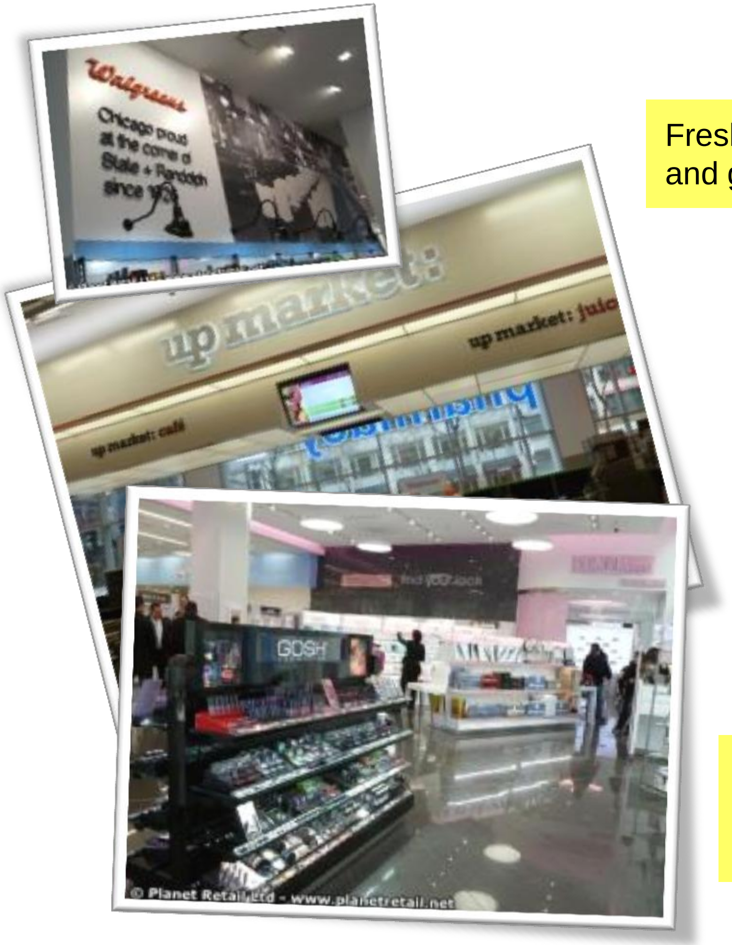
Value: Expansion is on the horizon for value retailers – i.e. dollar stores and limited assortment grocers – which no longer are just for low-income shoppers, but attracting a broad swathe of the US shopper population.

Family Dollar

Aldi

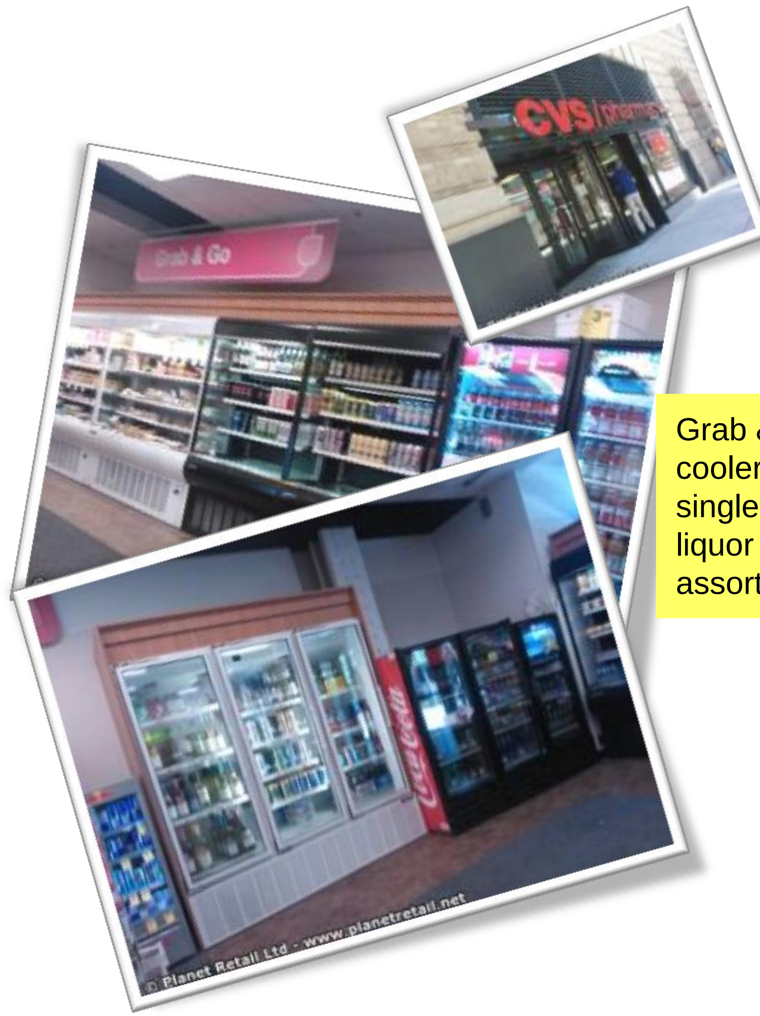


Localization – The new ‘convenience’ stores will be those offering localized assortments and solutions that reflect surrounding neighborhood demographics and shopper needs.



Fresh prepared and grab & go

Upscale beauty destination



Grab & Go, cooler wall, single-serve liquor assortment

Urbanization – Urban is one of few US expansion opportunities remaining for big-box retailers. The land rush is on as a host of retailers look to fill the gaps in urban food deserts in the coming years.

Walmart continues to trial small-box Express stores.

CityTarget launched in July 2012 with a mix and assortment tailored to urban needs

Hypermarkets & superstores: Latest concepts and developments.

Retailers are being forced to experiment and adapt their large stores in order retain customers and retain purpose in a changing world.

A co-branded promotional area with Coca-Cola at Carrefour planet. The soft drinks brand is widely promoted throughout the store.

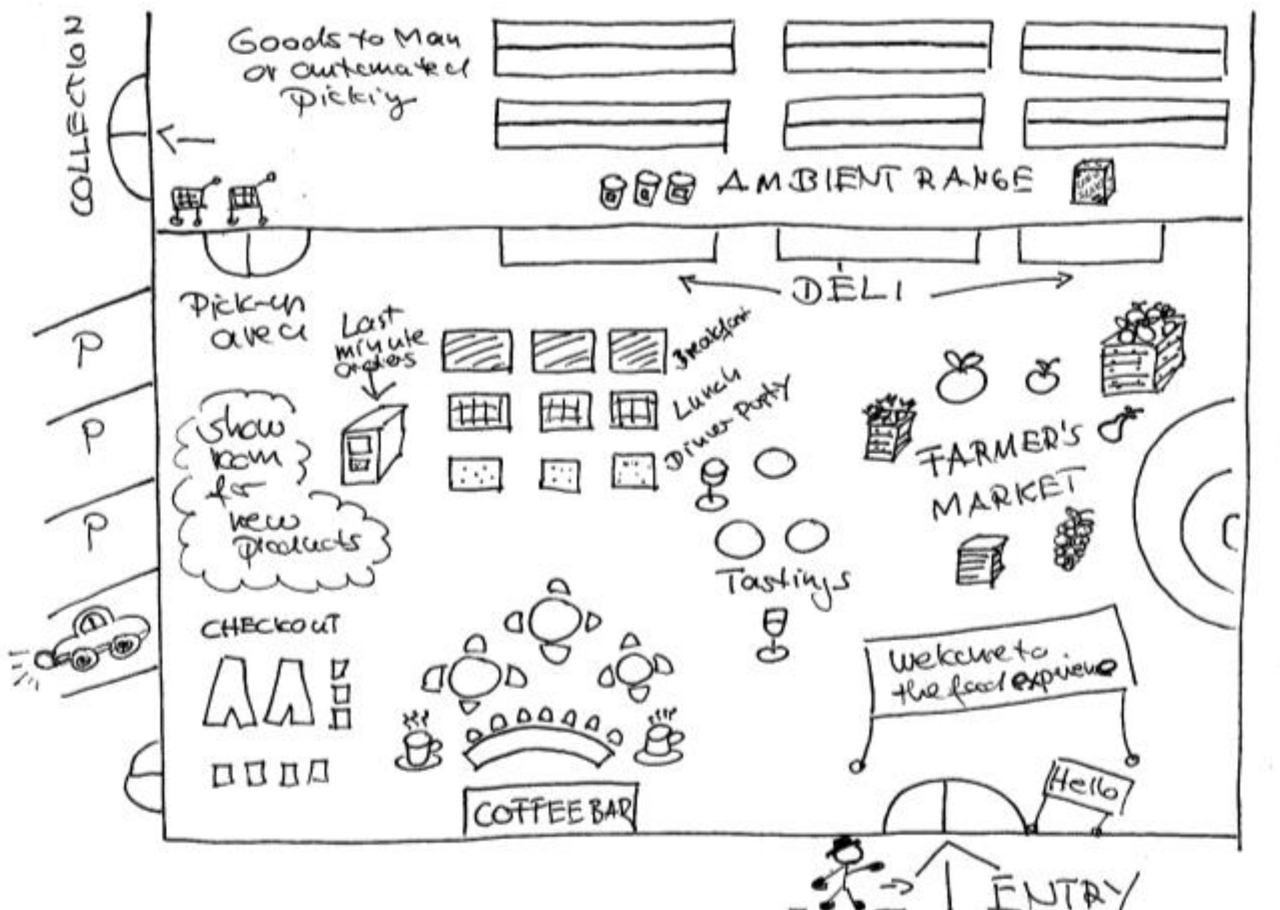
Self-discount department at Auchan's Jumbo hypermarkets in Portugal.

Carrefour has begun to reinvent its Brazilian hypermarkets – by converting stores to its Atacadão cash & carry format.

Walmart's successful, price aggressive compact hypermarket format Bodega Aurrera in Mexico.

Planet Retail's vision - the grocery store in 2020

Large stores can be remodelled to a totally new store type.



MyCommerce - the consumer in the driver's seat

What's on the mind of the consumer?

Today's consumers are armed with information, empowered by price transparency, and expect retailers to listen to their views.

Always online

Savvy

- Proud to be frugal, expect retailers to help them save.
- Benefiting from price wars.
- Power to vote with their feet.
- Trading down... and up.

Active & Empowered

- Armed with information, empowered by price transparency.
- Newfound voice and want to be heard.
- Fuelled by technology and social media.

Raised expectations

- One size no longer fits all.
- Demanding a more personal and relevant experience.

Mobile Internet is the game-changer

Smartphone and e-commerce price comparison tools mean that price **transparency** is something retailers will have to embrace.

Smartphones, using apps such as RedLaser, enable users to compare prices instore by simply scanning their barcode. The new Amazon Flow augmented reality app goes a step further, allowing users to scan products instore and display a wealth of related information – such as customer reviews and multimedia content.

Retailers have responded by offering price guarantees both in and out of the store.

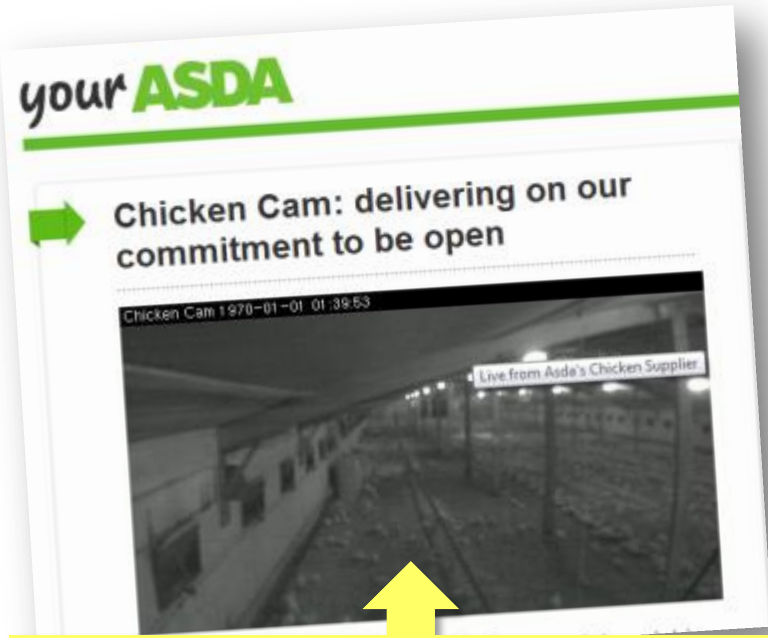
Sainsbury's launched a 'Brand Match' initiative which guarantees to match prices of over 12,000 branded grocery lines against Asda and Tesco.

quiestlemoinscher.com

Leclerc has launched a mobile version of its price comparison site quiestlemoinscher.com.

Walmart offers a price-match guarantee year-round, not only in the Christmas season.

Customers increasingly ask for detailed product information such as point of origin, requiring retailers to provide a new level of **transparency**.



Walmart's Asda in the UK responded to negative criticism of its farming and factory policies by embracing transparency installing webcams with the live feeds viewable to the public.

In 2011, Aldi became the first retailer in Germany to pro-actively offer traceability information for fresh meat on smartphones.

Seven & I's Ito-Yokado in Japan offers shoppers the ability to scan a QR code on its private label products and gather information about the individual producer.

Major obstacles

- Availability of reliable, comparable product information.
- Accuracy of data such as a retailer's inventory.

Retailers need to be present whenever a consumer is in ‘shopping mode’.

Smartphone apps make it possible

- Preparing shopping trips
- Looking for bargains
- Searching for store sites
- Shopping from online stores
- Retrieving product information
- Comparing prices
- Sharing information via social networks
- Scanning products
- Paying with the phone

Target consumers

- at home
- on the move
- in the store

Retailers need a proactive strategy on this.

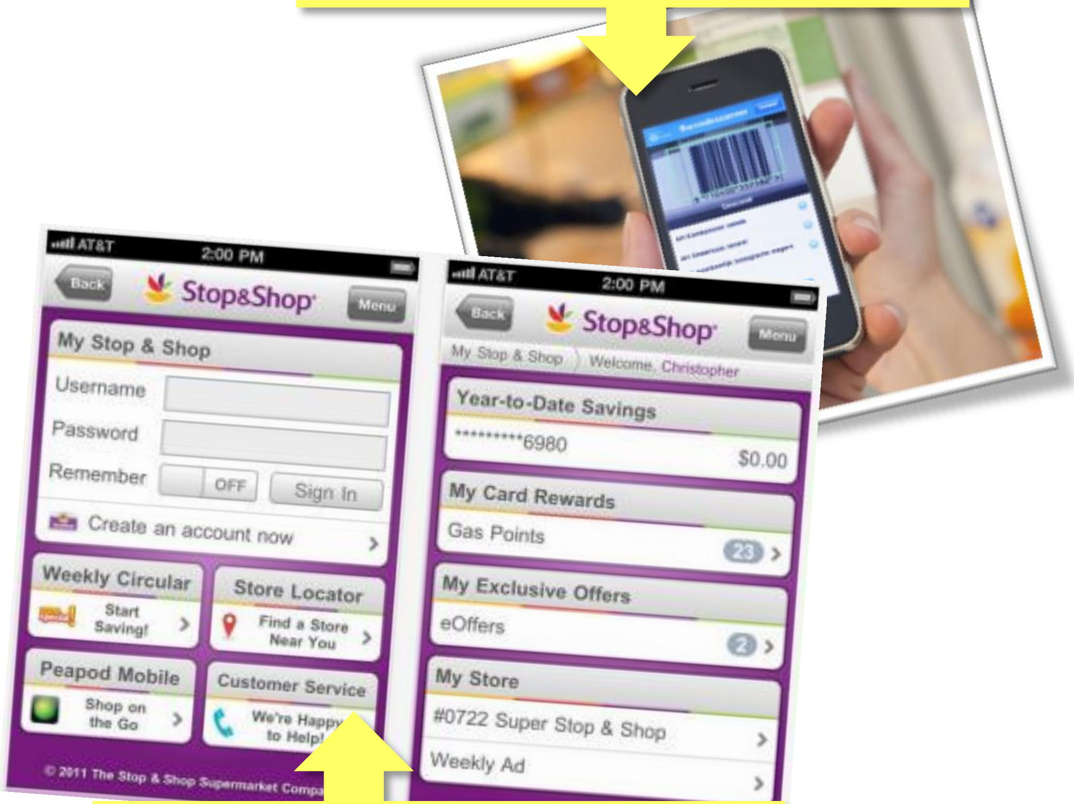
Case study: Ahold Albert Heijn and Stop&Shop

Ahold

Ahold is one of the pioneers of mobile commerce, providing comprehensive customer services via smart phones.

Albert Heijn first released its Appie shopping app in November 2010 and has been continuously updating its functionality based on customer feedback.

- Scanning function
- Shopping list
- Personalized messages and promotions according to location
- Weekly circular
- Product information
- Recipes with ingredients
- Store finder
- Available for iPhone and Android.



Available on the App Store

android

Long-time self-scanning pioneer Stop & Shop expanded the Scan IT! scheme to shoppers' mobiles.

Case study: Best Buy and Macy's reward customers 'checking-in' to their stores.

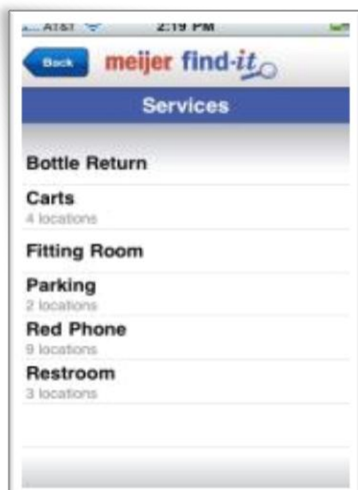
- Registered users entering a Macy's store, see a bubble appear on their iPhone saying, "Welcome! 40 kickbucks".
- Afterwards, a list of instore offers appears.
- Customers can accrue additional points by scanning the barcodes on select products with their phones.
- Based on a proprietary sound signal not on GPS, which is not applicable indoors.

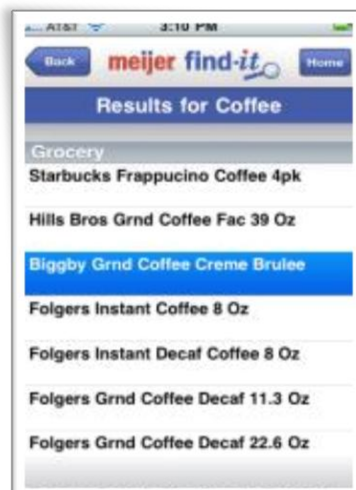
Case study: Meijer Find-it.

meijer

Shoppers navigate the store with a smartphone to find products and store services.

- Location of specific products, sales items and promotions.
- Location of services available in the store, such as customer service desk, restrooms, fitting rooms or bottle returns.
- Remember my parking spot.
- Location and contact information for all Meijer stores.

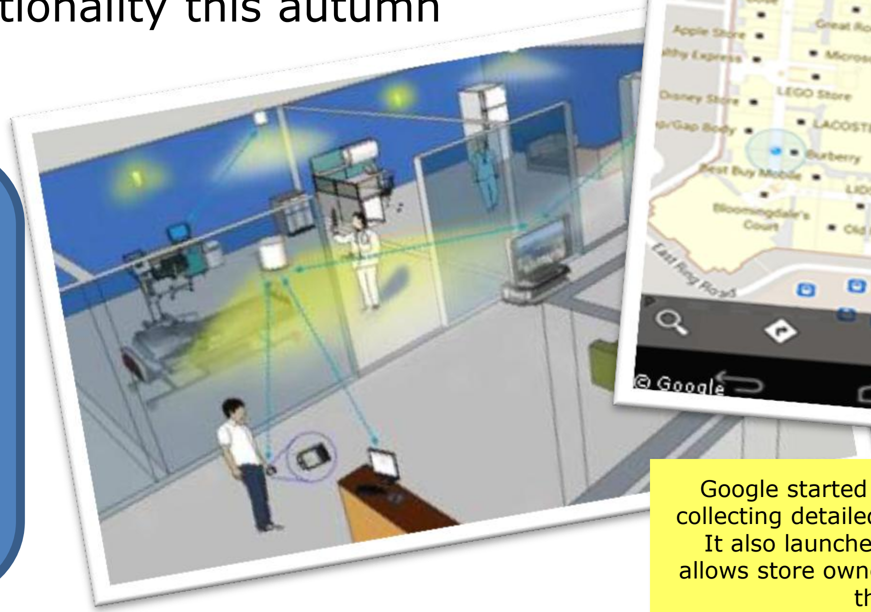




Indoor navigation opens up new marketing opportunities.

Retailers can approach shoppers with relevant information at the point of decision and gain valuable insights on buying patterns.

- In the US, IKEA, Macy‘s and Home Depot are piloting Google Indoor Maps
- French retailers, including Carrefour, Casino and Auchan will test the functionality this autumn



Current solutions are using Wi-Fi triangulation and/or Bluetooth. A next generation Indoor Position System (IPS) will also use NFC and interact with smartphones‘ gyroscope, magnetometer, accelerometer and altimeter.

Google started to map inside locations , collecting detailed floor plans from retailers. It also launched a self-service tool that allows store owners to upload floor plans of their outlets.

Many retailers still fail to enable its employees acting at eye level with the empowered consumer.

With **real-time** access to inventory data, the mobile-enabled store assistant can immediately…

…look up if the required product is

- in stock,
- on-hand at another outlet
- available online

…order directly

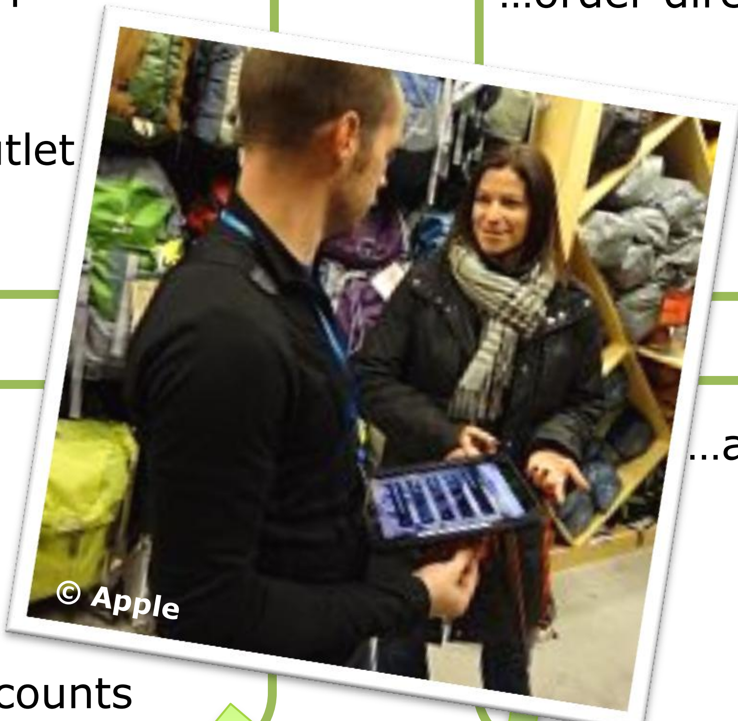
- from another store
- from the online shop

…arrange delivery

- to customer's home
- to be picked up at the store later

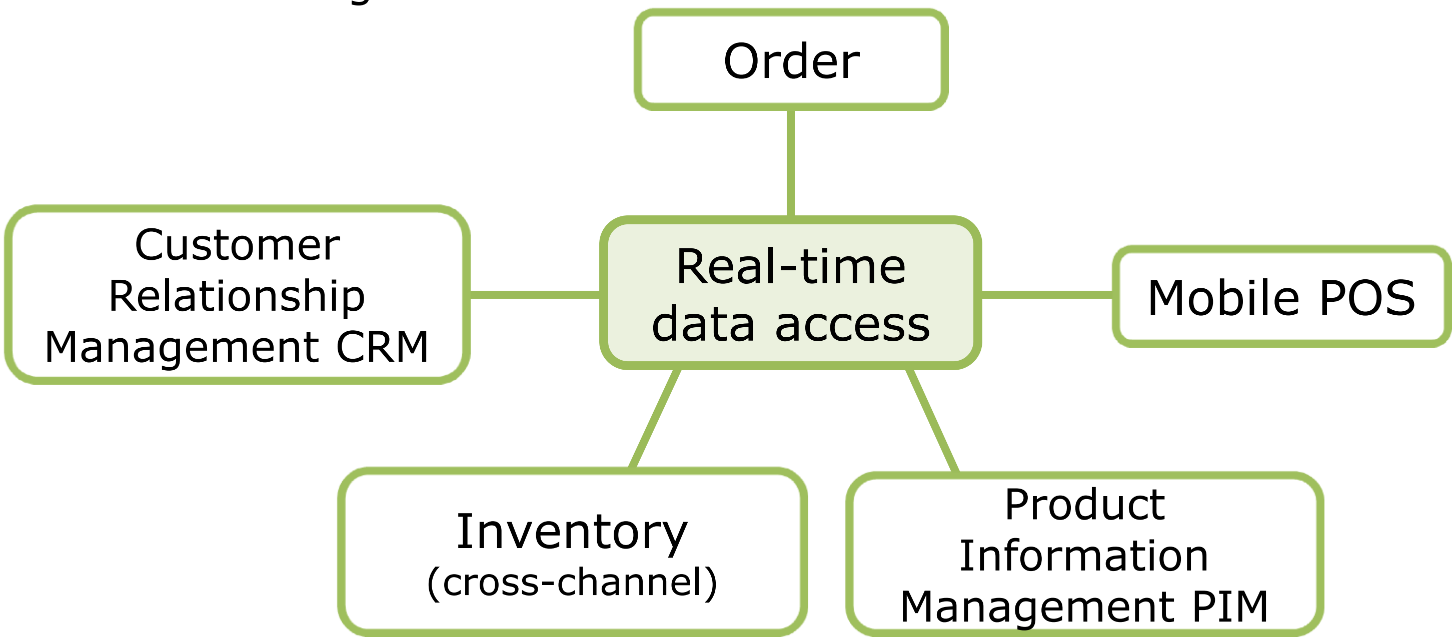
…checkout customer

- collect payment
- redeem coupons
- apply personalized discounts



Real-time data access – A challenge for the CIO

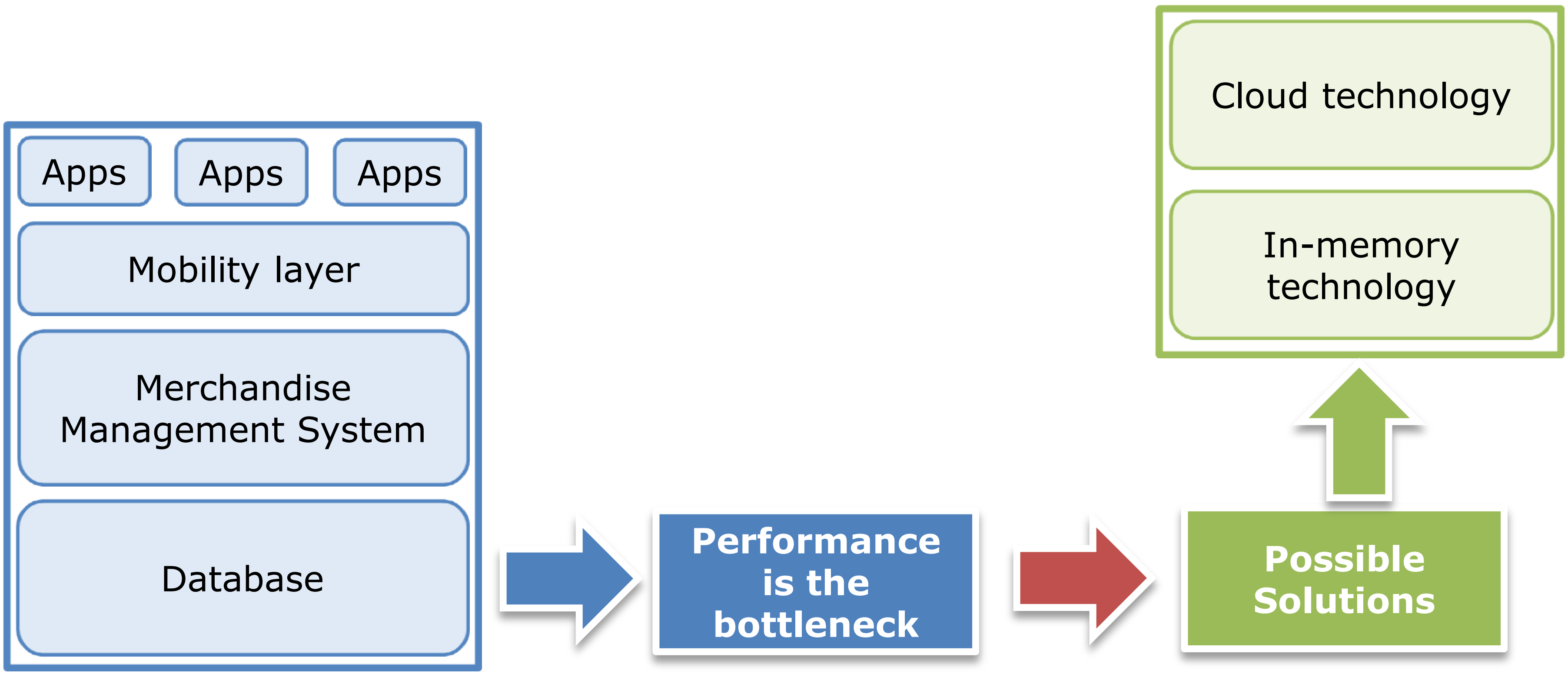
Retailers also need real-time access to operational data to enable a true multi-channel offering.



Today, most systems work in silos!

To enable real-time data access, systems need to be more performant.

The latest information on available stock in all stores, warehouses and fulfillment centers is required at the touch of a button.



First, retailers have to do their homework

The majority of technology spending will continue to be invested in traditional areas such as:

- POS systems;
- Merchandise management systems;
- Data warehousing; and
- Warehouse management.

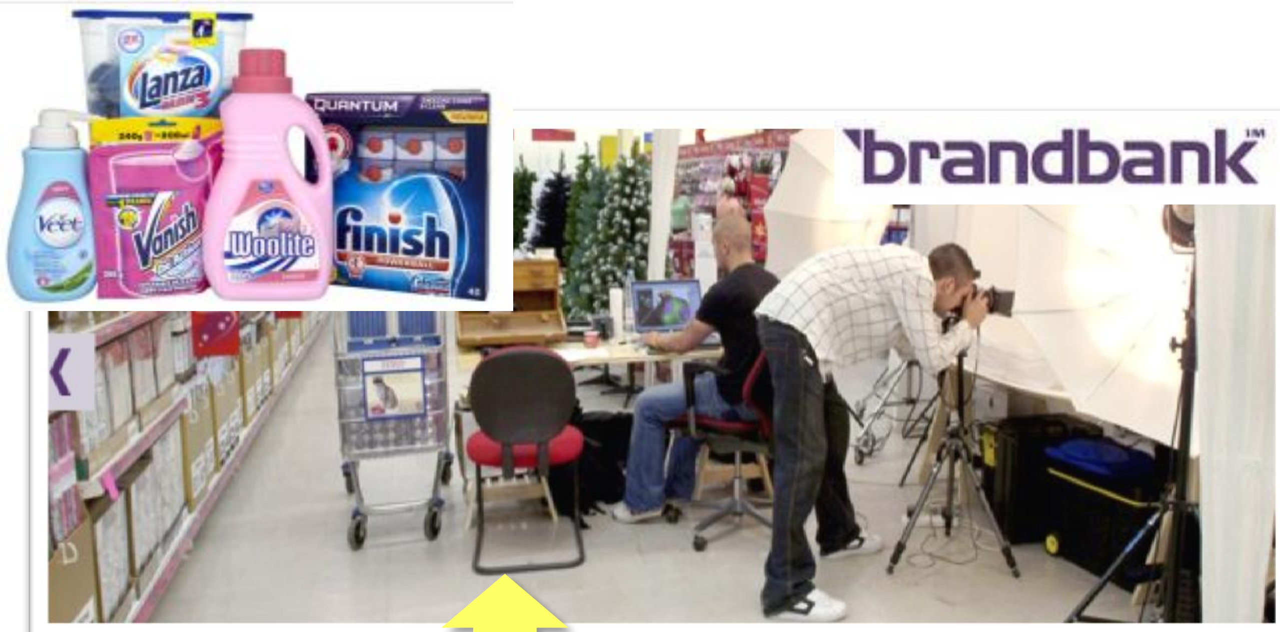
Before retailers can benefit from *any* innovative technology, they have to achieve:

- ✓ Accurate master and inventory data;
- ✓ 100% scanning rate;
- ✓ Supply chain visibility; and
- ✓ Proven performance in data warehousing.

Product Information Management

To meet expectations of today‘s consumers, retailers need synchronized, comprehensive and up-to-date product data from a trusted source.

- Ingredients
- Origin
- Marketing information
- Images and multi-media files



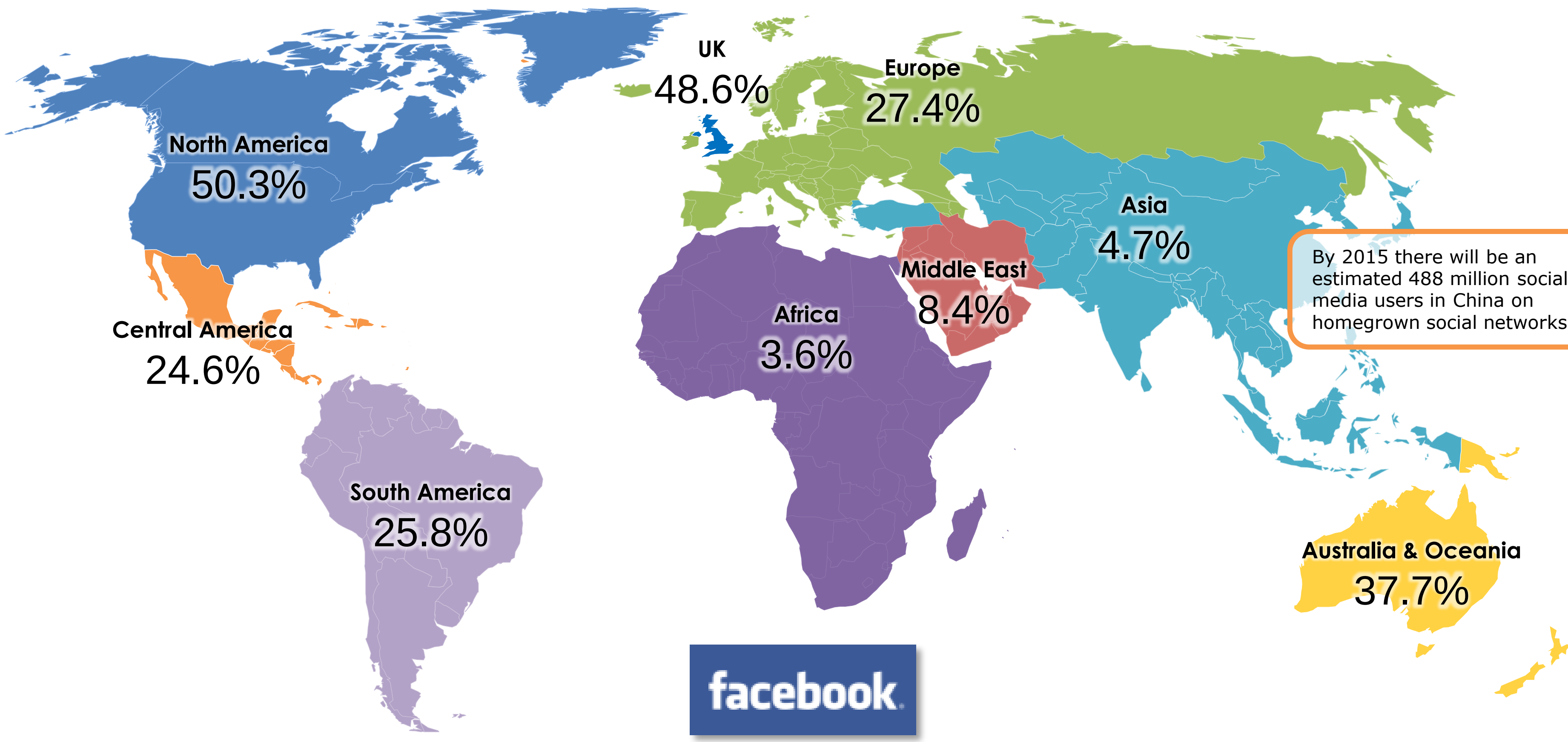
Brandbank shoots product images and captures product information for retailers such as Tesco. The service is paid for and approved by the supplier.

WORLD SYNC

In September 2012, 1Sync and SA2 Worldsync merged to become the world’s largest product master data pool.

Social media sites are growing rapidly worldwide in line with growing internet usage. Facebook is the largest but there are many more local sites as well.

Facebook: Worldwide Penetration, 2011 (%)



By 2015 there will be an estimated 488 million social media users in China on homegrown social networks.

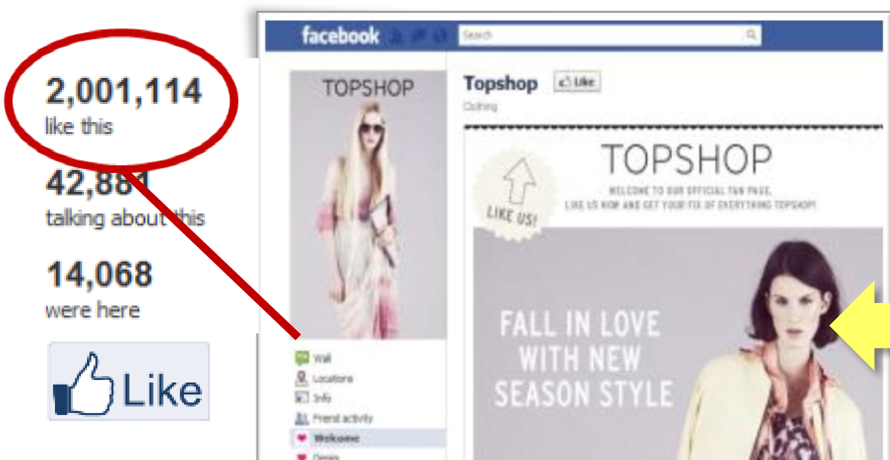
Social media is increasing in significance as more people look to be influenced by friends and followers.

'Word of mouth at scale' - Transmitting to audiences of audiences.

Businesses are experimenting with promotions based around 'Likes' and 'Places'.

- 'Like' allows users to share things they like and seek approval from others within their network.
- 'Places' allows people to check in at locations such as stores and share this information with friends.

Shopkick rewards customers for walking into a store



TopShop has over 2 million 'Likes'

Amazon added social media buttons in early 2012.

The primary reason for logging onto social networks is to connect with friends and family.

For this reason companies wishing to engage with customers can only succeed by striking the right balance:

Research indicates
57%
of customers do **NOT** want to engage with brands via social networks.

A typical user will only connect with up to
6 brands
- a small percentage of those available.

BUT

56%
of customers are more likely to recommend a brand after becoming a fan.

71%
of shoppers regularly rely on reviews from family and friends.

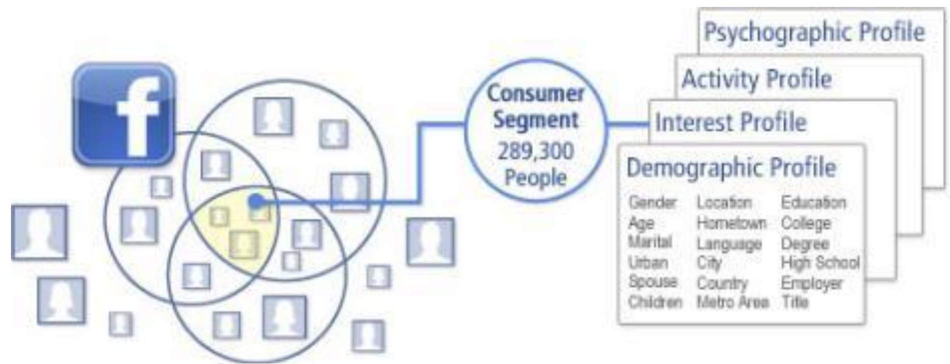
68%
are more likely to buy a product or visit a website based on a referral from a friend.

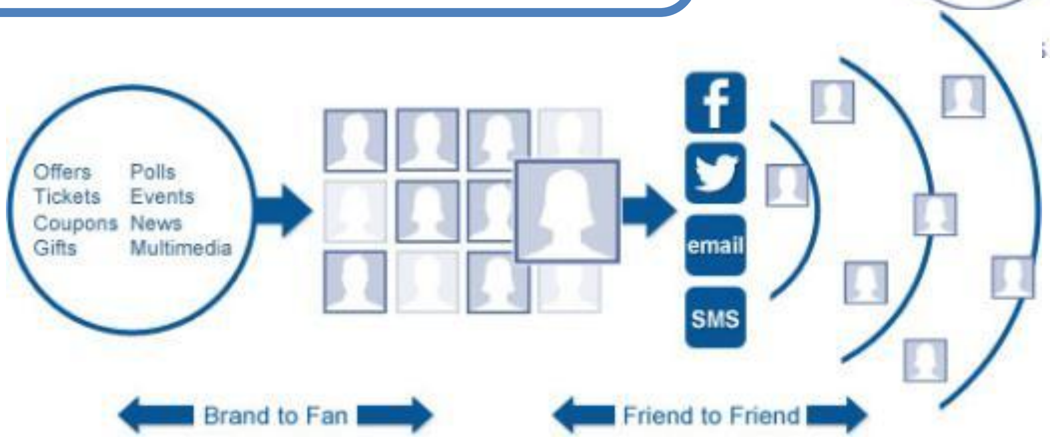
Social Media can be an invaluable data source.

Listen to the voice of the consumer by using

- Analytics software to search web 2.0 sources for opinions on brands and products
- Integration into Business Intelligence Solutions

Challenge: From data to decision





Social media support the consumer's show-and-tell affinity. Clever retailers and manufacturers make them promote their products – at no cost.

Customer endorsement helps in shaping assortments and developing new products.

MIGROS

"Migipedia was mainly created to optimise our product ranges. Migipedia is sort of a gigantic test laboratory."

"Social media is a free, massive focus group, taking place in real time. And it is taking place with or without your permission."

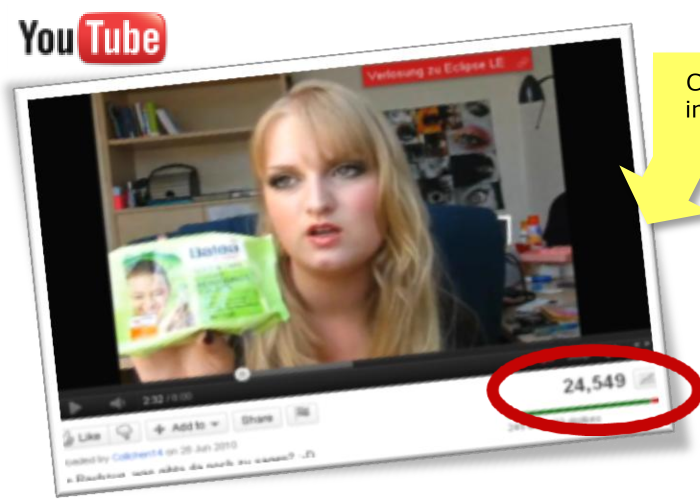
Rick Bendel
Global Chief Marketing Officer, Walmart

Drugstore operator dm asked customers for help to create a private label shower gel via the open website unseraller.de.

Social media is dynamic, flexible and offers excellent opportunities.

The most important strategy for companies is to **participate** - try new things and **measure** the impact. These could include:

- Two way conversations, e.g. fun promotions, instant customer service via Twitter.
- Getting customers to 'Like' you - makes your messages visible on a fan's Facebook wall and influences their 130 (average) friends and followers.
- Turn fans into **brand advocates** by giving them something they can't get elsewhere.
- Use social media to get to know your customers and let them influence your strategy.
- Target mobile users.
- Make sharing easy by including buttons on e-commerce sites.
- Don't lose sight of the social element.



Consumer reviews have become increasingly popular on YouTube as well as on blogs.

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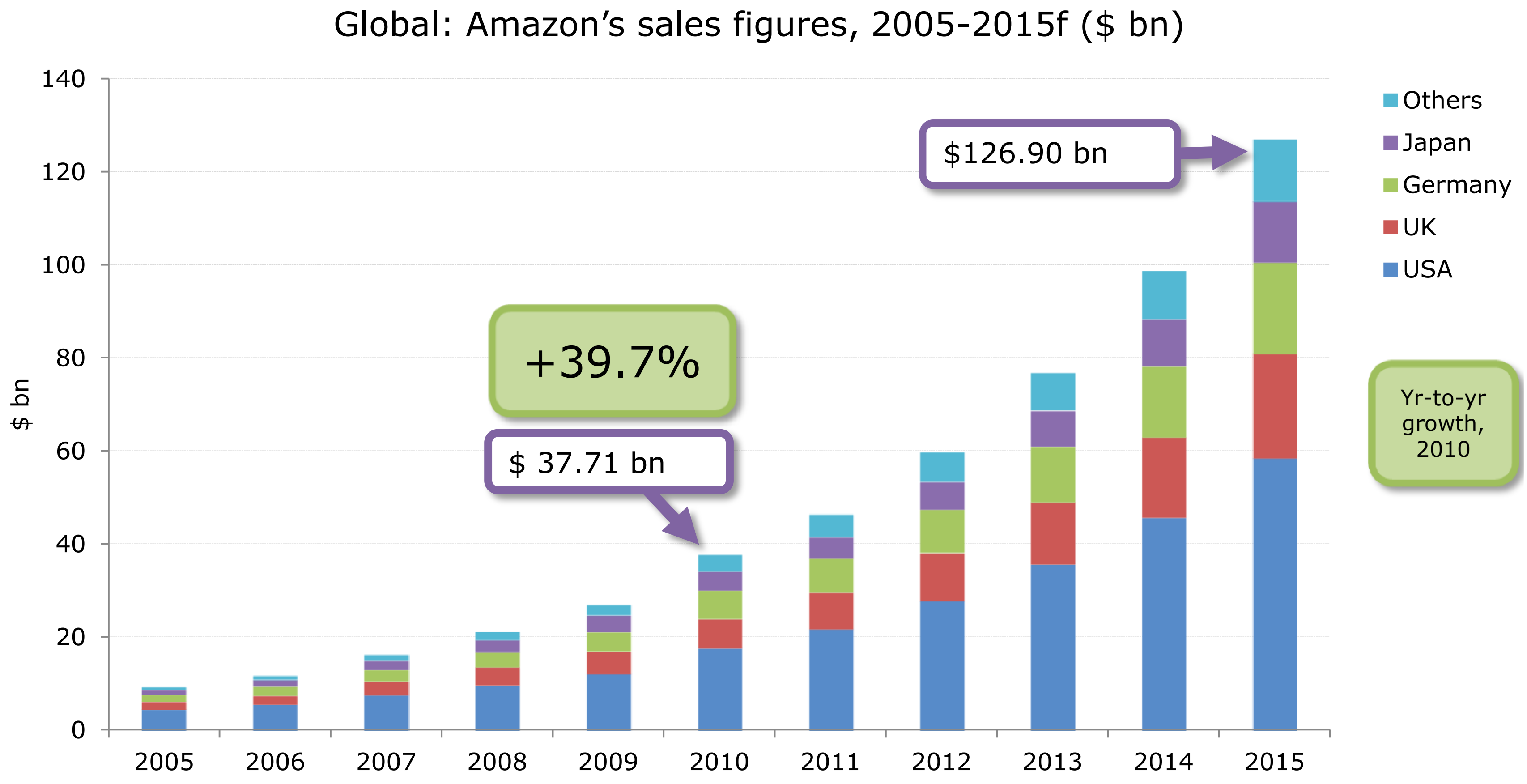
Omni-Channel retailing

Amazon's average year-to-year growth over the past five years is 32.4%. In H1 2011, sales grew by 44%.



Note: f – forecast; Also included are – Canada, France, China, Spain, Denmark, Italy, Norway and Sweden.
Source: Planet Retail

Planet Retail predicts that by 2015 Amazon will be among the Top 10 Global Retailers.

Global: Top 10 retailer sales figures, 2010e-2015f ($ bn)

	Company	Sales, 2010e
1	Walmart	446.5
2	Carrefour	148.7
3	Tesco	104.4
4	Metro Group	102.1
5	AEON	95.7
6	Seven & I	93.1
7	Kroger	86.1
8	Schwarz Group	85.3
9	Costco	79.3
10	Auchan	78.9
31	**Amazon**	**37.7**

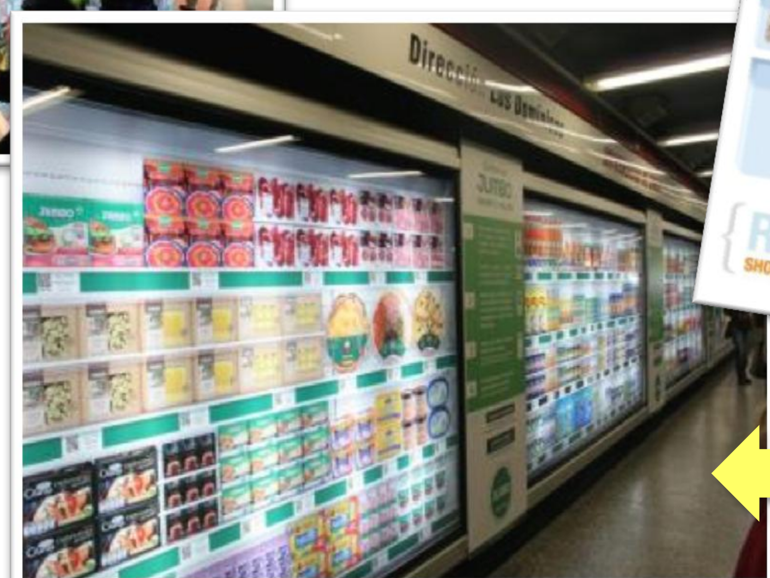
	Company	Sales, 2015f
1	Walmart	625.8
2	Carrefour	177.4
3	Tesco	155.8
4	Schwarz Group	131.6
5	Metro Group	131.3
6	**Amazon**	**126.9**
7	AEON	123.1
8	Costco	112.9
9	Auchan	112.8
10	Seven & I	111.1

Note: e – estimate; f – forecast.
Source: Planet Retail

Bricks and mortar players are launching innovative new ways of enabling multi-channel shopping.

Tesco in South Korea caused a stir in 2011 by launching a QR code wall – enabling shoppers to add items to their online shopping basket simply by scanning the QR code. Orders can then be delivered that evening. Test locations included a subway in Seoul (above).

Sears and Kmart launched a virtual QR wall for toys in late 2011 in the US



Other retailers quickly followed suit – including Ocado in the UK and Jumbo in Chile (left).

French grocer **Casino** is to launch a first trial of its digital shopping wall in Lyon in October 2012.

Entertainment retailer **HMV** and 20th Century Fox launched QR code shopping walls in bus shelters in major UK cities in November 2011.

© Marketing Magazine

Swiss retailer **Coop** (CH) launched its virtual store in the Coop Bahnhofsbrücke in Zurich in November 2011.

UK-based department store group **John Lewis**’ wall went live in the window of the Brighton branch of its food retail chain Waitrose in November 2011 .

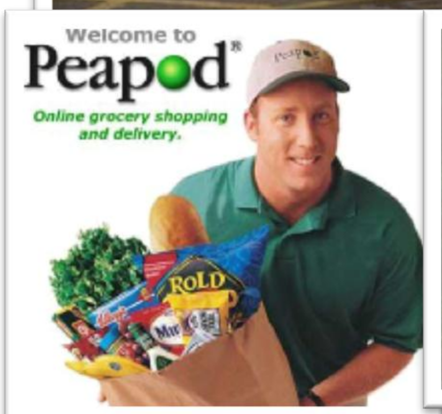
© Marketing Magazine

© Retail Week

Online grocery retailer **Ocado** launched a virtual shopping wall at One New Change shopping center in London in August 2011.

Online sales of food

Can grocery home delivery services ever be profitable?



Home delivery of food needs

- Significant investments in fleet of refrigerated delivery vans
- Significant labor costs for instore order picking and home delivery, always on top of the shelf price

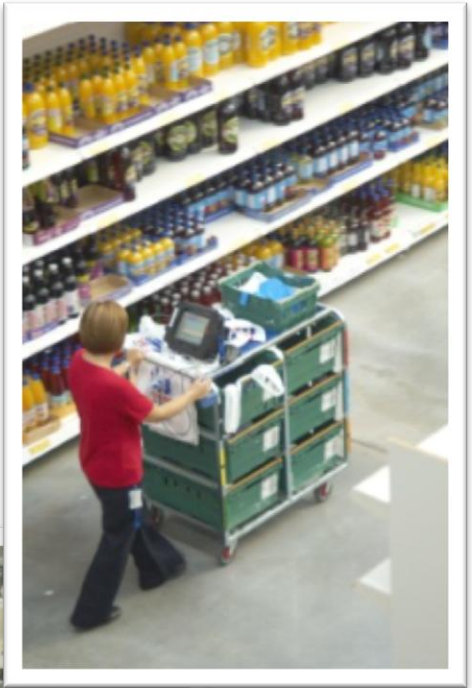
or

- Significant investments in dedicated direct to consumer fulfillment centers with automation technology
    - According to Planet Retail research, retailers must calculate an average cost of EUR10 ($ 15) per order. But not many consumer are willing to pay this amount as fee or in the form of higher prices.

A new generation of **picking centers** is replacing step-by-step **instore picking** which once replaced the first generation of picking centers.

The new generation of picking centers is equipped with technology that automates storage, sortation and order consolidation.

But picking is unaltered done manually and remains labor intensive



Tesco’s ‘Dot-Com-Only-Store’ in Aylesford, UK.

Site to store (click & collect)

Unburdens the retailer of expensive home delivery, while offering the full range of products.

"Auchan Drive is an essential element of the progression of our business in France."

Xavier de Mézérac
CFO, Auchan

Shoppers order online and pick up their orders outside of the hypermarket or at dedicated pick-up stations.

While site to store services are cheaper than home delivery, they are still more expensive than instore shopping.

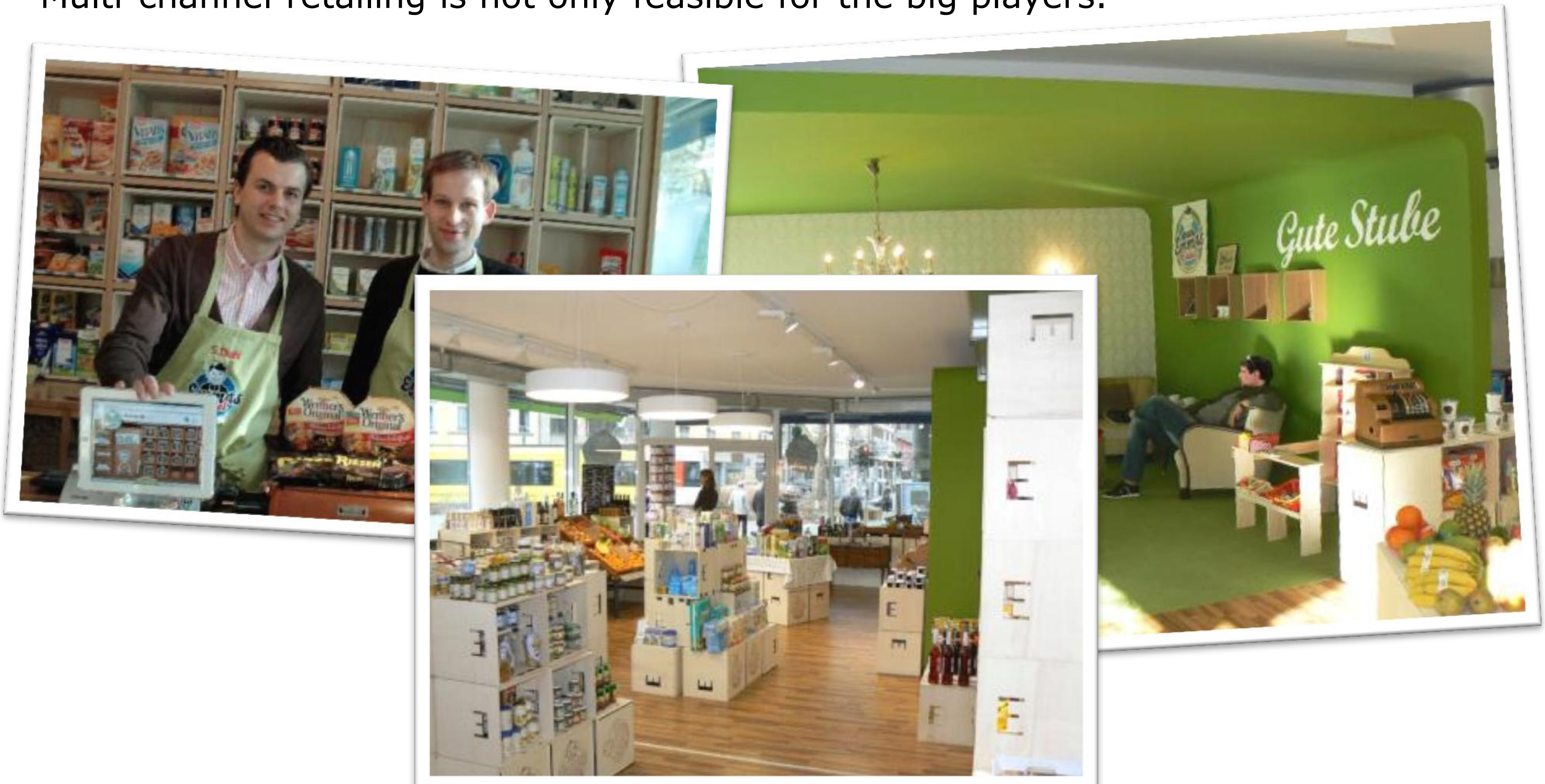
CHALLENGES

- Further erodes role of physical store
- No impulse buying (but other opportunities)
- High costs for picking and logistics
- Low average basket size
- High density of retail outlets in some markets
- Little willingness to pay for the service
- 'Misused' for bulky low-margin items

Rewe employee picking goods a customer ordered online

"Emmas Enkel" – A new type of mom & pop store

Multi-channel retailing is not only feasible for the big players.



5

The checkout of the future

Why are retailers investing in new ways to check out?

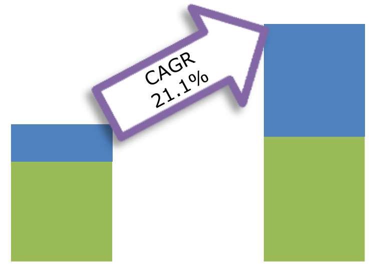
Retailers' Objectives	Retailers' Challenges
Queue busting / Labour costs	
▪ Queue busting without an increase of labor costs. ▪ Deploy more staff in customer service and shelf replenishment (60-70% of store labor costs go into the traditional checkout). ▪ Cope with traffic peaks.	▪ Theft control needs staff intervention. ▪ Age control needs staff intervention. ▪ Some shoppers dislike self-service ("I don't want to take the cashier's job").
Freeing up space for merchandise	
▪ Search for a faster solution that can handle more transactions in the same period of time. ▪ Search for smaller solutions.	▪ Scanning at self-checkouts takes longer than scanning by trained cashier. ▪ Dedicated packing areas need space / missing packing areas slows down the checkout process. ▪ Additional self-service payment machines need extra space. ▪ Inbuilt theft-protection technology needs space.
Shoppers' Convenience	
▪ Less item handling for the shopper. ▪ Shoppers can determine speed of self-checkout process.	▪ Self-checkouts demand as much item handling by the shopper as traditional checkouts. ▪ Re-scans after self-scanning with mobile devices can be annoying for shoppers. ▪ Money stored in closed cassettes or safe bags.
Security	
ificant issue for retailers which is hard to ware. ay coins and notes, always balanced tills robberies by automating cash handling.	▪ Self-service opens new ways of fraud. ▪ Solutions without inbuilt theft protection (i.e. self-scanning with mobile devices) are less secure than the traditional checkout.

Worldwide deployment of self-checkout systems.

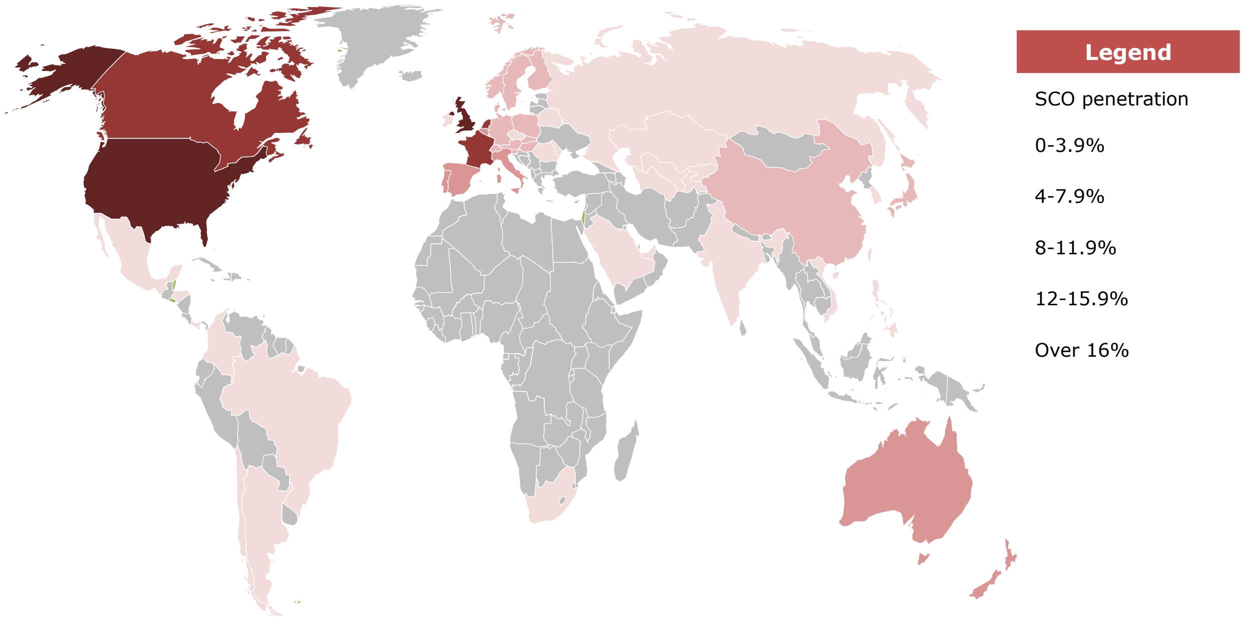
Global annual growth of self-checkouts is around 21%.

Global: Installed Base Self-Checkout Systems in Grocery Retail, 2010-2015f

2010	2015f
124,003	322,373

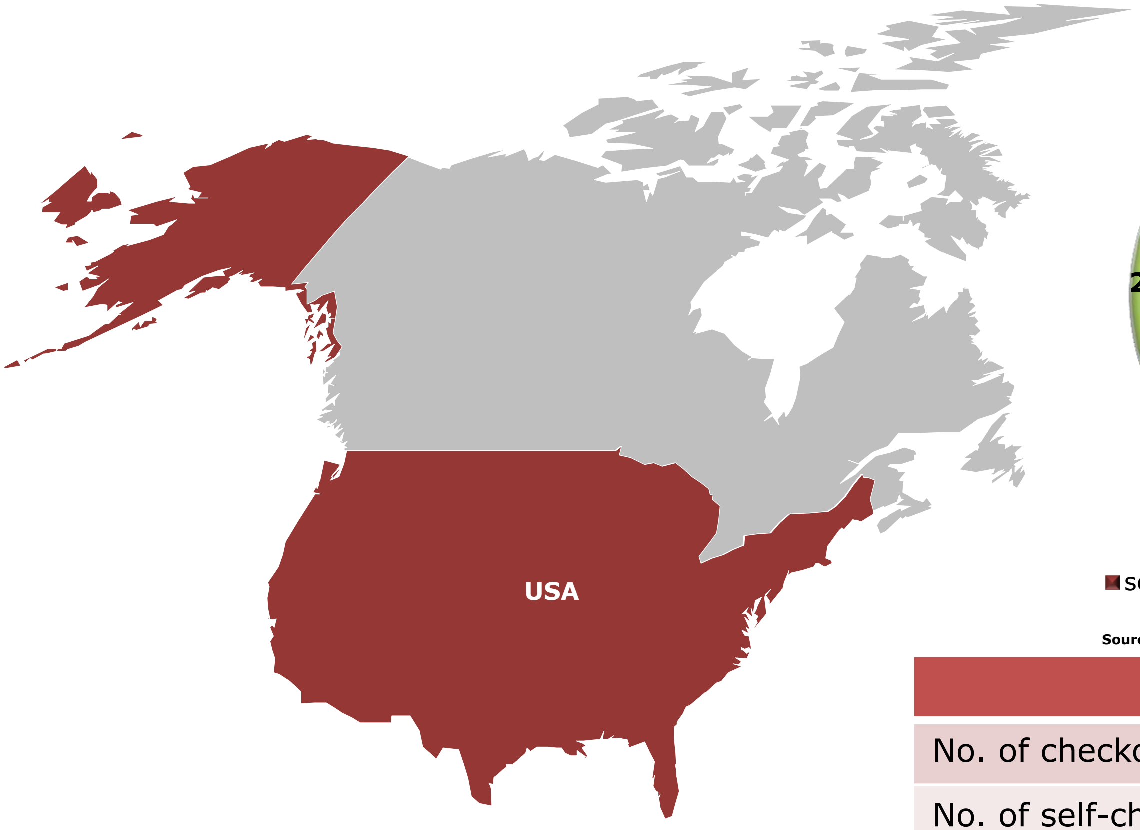


Global: Self-Checkout Penetration, 2015f (%)



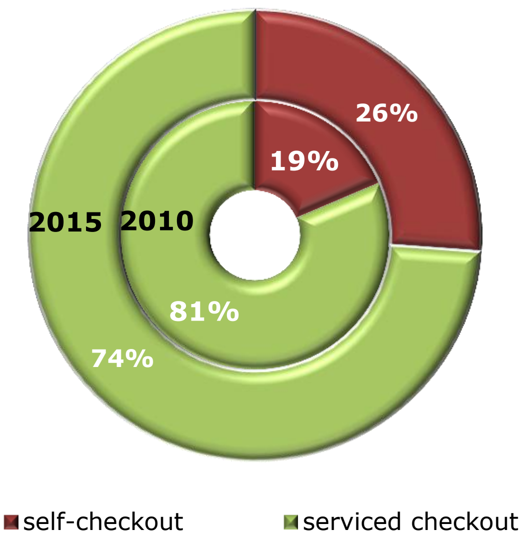
Note: f – forecast
Source: Planet Retail

The **USA** is the most developed self-checkout market with a predicted growth rate of 10% annually



High penetration / moderate growth

Grocery Stores: USA 2010-2015



Source: Planet Retail

	2010	2015
No. of checkouts	780,083	835,309
No. of self-checkouts	90,788	148,420
Penetration rate	11.6%	17.8%
CAGR (compound annual growth rate)	10%	

Scenario 1

Fully automated scanners could replace self-scanning.

In March 2010, Kroger in the US became the world's first retailer to deploy fully-automated tunnel scanners at the checkout.

The Kroger Marketplace store in Hebron, Kentucky, was the first to deploy the 'Advantage Checkouts'.

Scenario 1

Fully automated scanners could replace self-scanning.

Ahold

In March 2011, Ahold's Swedish operation ICA became the first European retailer to test a fully automated scanning solution.

ICA expects the solution to be about 25% faster than a traditional serviced checkout.

©ICA

MAXI ICA STORMARKNAD

At a Maxi hypermarket located in Botkyrka, Sweden, the retailer has installed one of **Wincor Nixdorf**'s newly developed 'Automated Checkout' systems, based on **Datalogic's** scan-engine.

Carrefour plans to install the machine at Dia discount store in Spain.

In May 2011, the '360 Scan Portal' was installed at a Rewe supermarket in Zülpich, near Cologne, Germany.

REWE

Scenario 1

Fully automated scanners could replace self-scanning.

Itab Scanflow's machine takes a **digital footprint** from each product out of nine classifiers such as weight, shape, volume and color but also spectroscopy, which describes the texture of a product or its packaging by its radiated energy captured via sophisticated fiber optics.

Thus, the machine can identify even loose produce such as apples **without a barcode**.

Scenario 2

Retailers are separating scanning from payment.

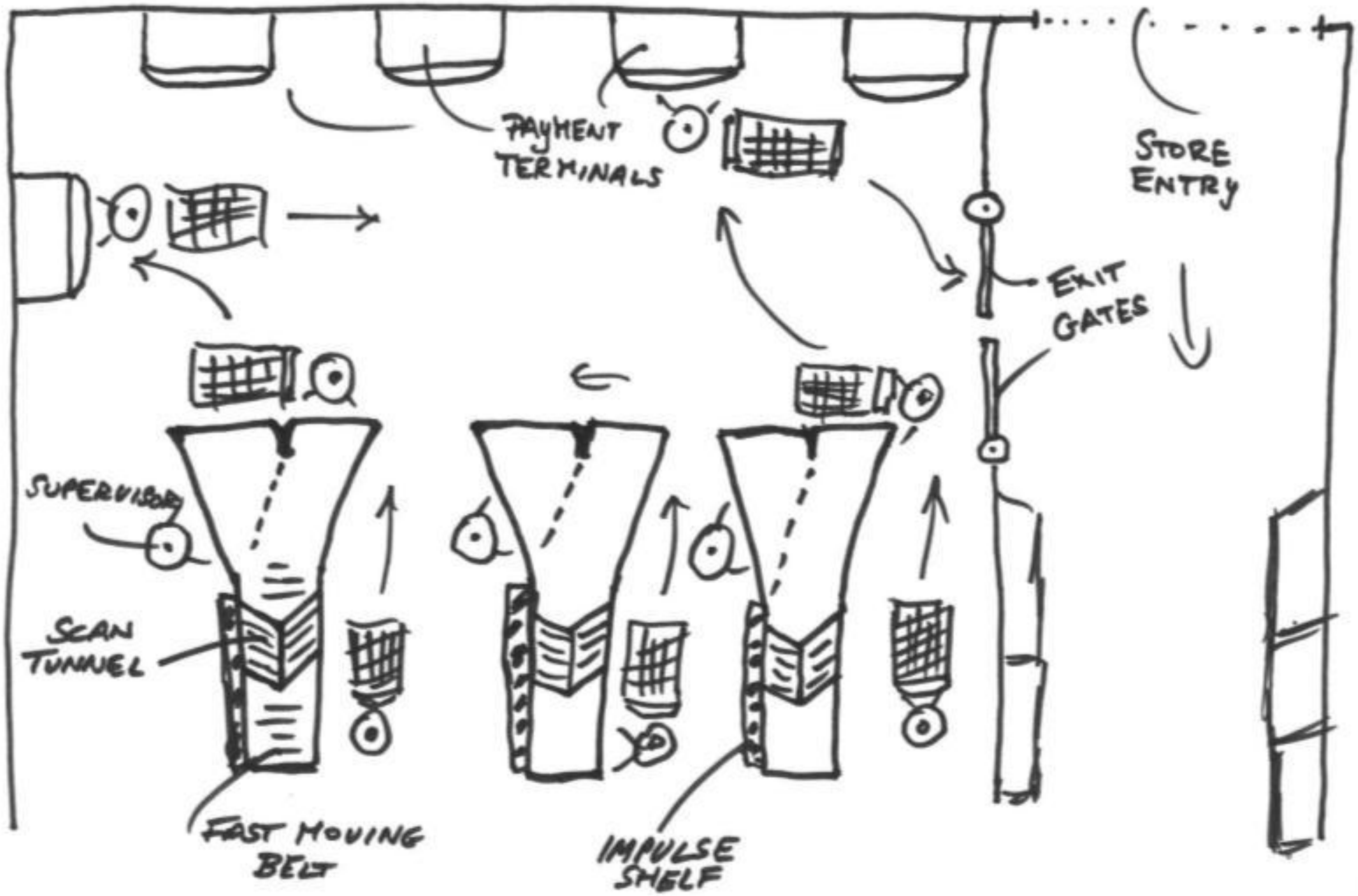
Auchan

Auchan is testing self payment terminals with Acrelec and Scan Coin.

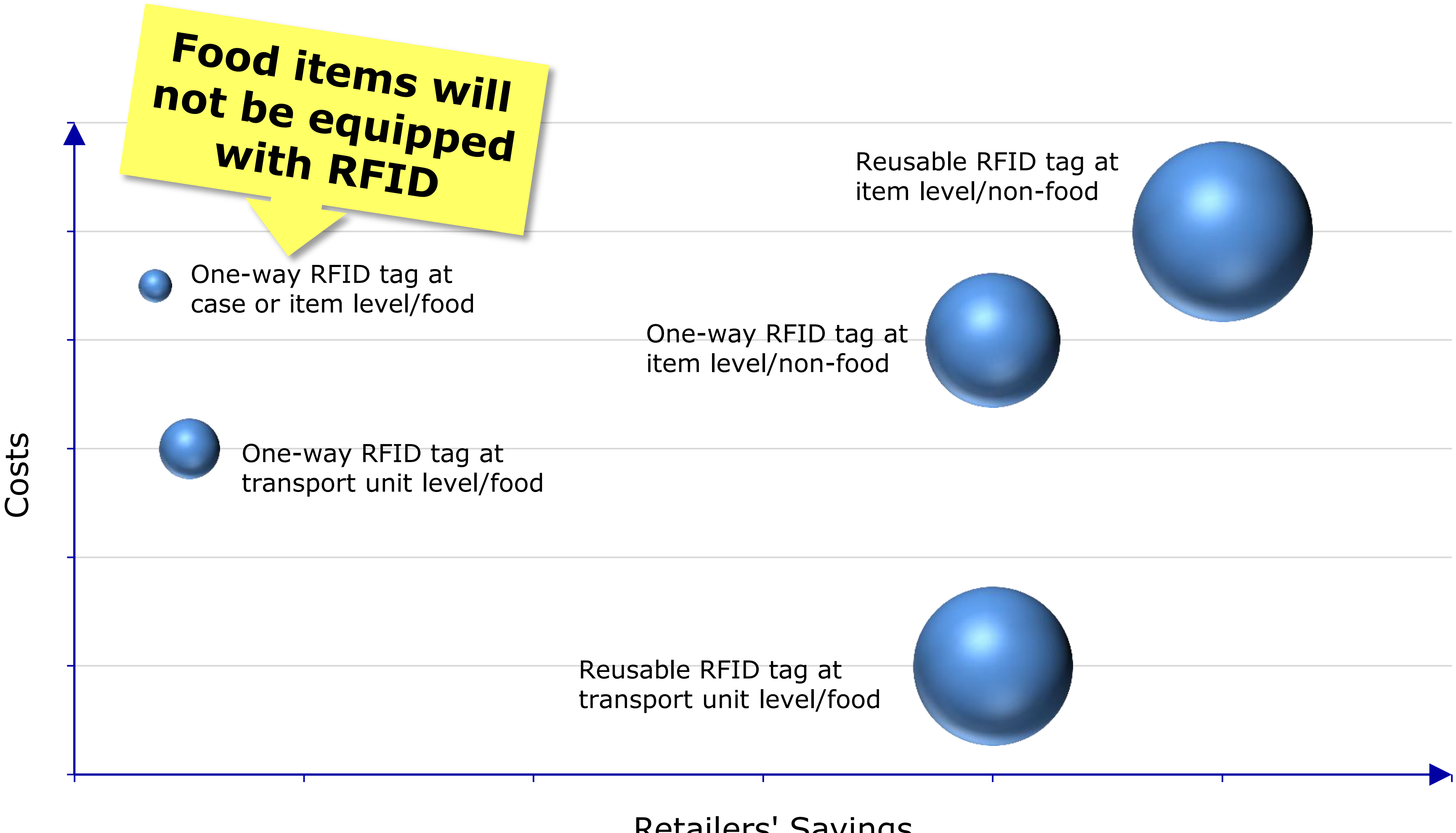
METRO GROUP
MADE TO TRADE.

Metro Group is testing self payment terminals with IBM and Gisecke & Devrient at its hypermarket operation Real in Germany.

The future checkout for big baskets – Planet Retail's view:



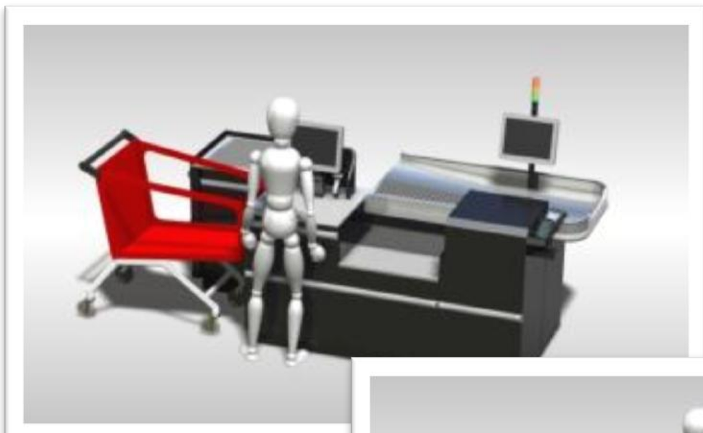
Market potential of different RFID scenarios



Scenario 3

Retailers are installing convertible checkouts.

Auchan



Géant Casino

Checkouts can be easily converted from manned to self-service operation.

Scenario 4

Retailers experiment with mobile checkouts.

NORDSTROM SAKS INCORPORATED BEST BUY Douglas

Retailers have started to deploy mobile checkouts with iPod's and payment docking stations from **Verifone**.

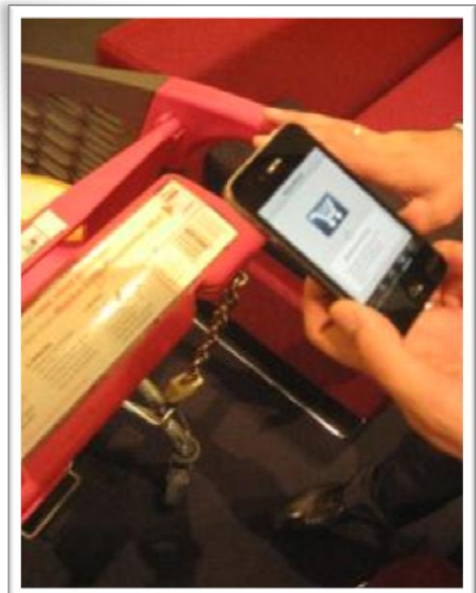
Scenario 5

Self-scanning and payment with smartphones

Self-scanning with the iPhone at Metro Group's Real Future Store in Tönisvorst.

METRO GROUP MADE TO TRADE.

Step 1

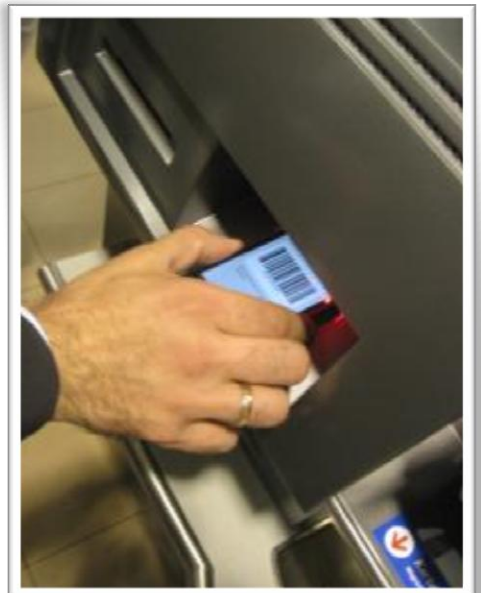


To start a shopping trip, customers scan the barcode on the cart. The iPhone then connects with Real's merchandising system.

Step 2

Red Laser's technology makes self-scanning with an iPhone easy. Once the barcode has been placed inside the square in the middle of the screen, it will recognize the product.

Step 3



A barcode displayed on the phone at the end of the shopping trip initializes the payment process at the Pecuron machine.

Case study: Stop & Shop rolls out scanning with shoppers' smartphones.

- Ahold's Stop & Shop brought 'Scan It!' onto shoppers' mobiles in May 2011.
  - Runs with software from Modiv Media.
  - Provides custom-made offers based on past purchases and current location in the store.

Stop&Shop

Rollout

- H1 2012: Expansion from then 50 stores to all 300 stores that use the MC17 from Motorola.
- 2012: Giant Landover and Giant Food to pilot smartphone app, too.
- Q2 2012: Pilot of integrated solution for loose produce.
- 2012/ H1 2013: Launch of smartphone scanning to as many stores as possible.

Source: Stop & Shop

Stop & Shop provides customers with fuel discounts to encourage them to use their smartphones for scanning.

Case study: Ahold Stop & Shop

Stop&Shop

- 1987: the retailer is the world's first to pilot self-scanning at Albert Heijn.
    - In 2005, the grocer started a new approach conducted by Wincor Nixdorf as system integrator with the MC17 device from Motorola and Yacme software.
- Stop & Shop is one of the most advanced retailers for mobile scanning:
    - Early 2000s: launch of Shopping Buddy - a touchscreen computer mounted to the shopping cart
    - 2008: Shopping Buddy is replaced with Motorola's MC17 and software from Modiv Media as before
    - 2009: Giant Landover joins the program
    - 2011: Stop & Shop starts scanning with shoppers' smartphones

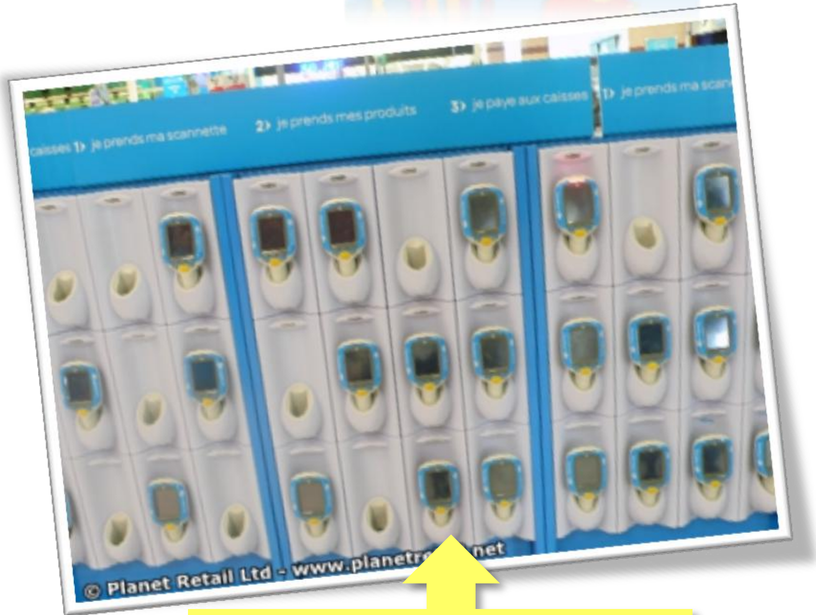
Source: Modiv Media

Stop & Shop has rolled out the 'Scan It!' program to the majority of its stores.

Major retailers around the world kick-started a revival of mobile self-scanning.

Several reasons have triggered this development:

- A new generation of hardware devices with touchscreens, color displays, enhanced scanners and improved user-friendliness.
- Innovative software that:
  - Enables partial re-scans of shopping baskets.
  - Facilitates scoring of shoppers according to their scan results.



It was Carrefour's roll out of the technology to its French, Spanish and Belgian operations that pushed mobile self-scanning significantly and prompted many retailers to follow suit.

Carrefour is one of the largest users of mobile scanning technology.

Case study: Kroger takes development into its own hands

- The US retailer has been trialing self-scanning with an in-house developed mobile device since June 2011.
  - Centerpiece of the platform is the PAL (Personal Assistant and Liaison).
    - Runs on a wireless network based on the ZigBee standard.
    - Integrates with tailor-made weighing scales.
  - Wincor Nixdorf provides consulting services for the project.
  - Full integration into Kroger.com and linked to shoppers' loyalty cards.
  - Payment at normal checkouts or dedicated terminals.
  - Currently live in three stores.
  - Shopping list facility trial - where PAL alerts customers when they approach an item on their list - is underway.

Source: Kroger

> "Shoppers spend closer to their budget if they see the totals. In one store, we even got dedicated, larger shopping carts for PAL users, because they buy that much."

Kirk Ball
Vice President,
Kroger Information Systems

US giants try to set standards for mobile payment.

MCX MERCHANT CUSTOMER EXCHANGE

Google wallet

ISIS

MCX

- Walmart, Target, Best Buy, CVS, Publix, Lowe's, Seven & I's 7-Eleven and other large US retailers jointly develop a mobile-payments network.
- The venture is set to offer up a mobile-commerce app that will provide payments and deals.
- Shoppers are able to make purchases in a store by tapping the phone against a reader placed by the cash register.
- No launch date is published yet.

Google Wallet

- NFC-powered solution launched in September 2011.
- Payment via credit and debit card accounts.

ISIS

- NFC-enabled mobile wallet to be launched in autumn 2012.
- Joint venture between AT&T Mobility, T-Mobile USA and Verizon Wireless.

Alternative payment solutions do not require NFC at all

eBay's PayPal brings online payment scheme to bricks and mortar stores.

- Home Depot first to pilot in January 2012 - rolls out to all stores in March 2012.
- Shoppers enter phone number and PIN at terminal or use special PayPal card.
- Benefit for retailers: Lower transaction fees as for credit or debit cards.
- Roll out to more retailers in May 2012, including Abercrombie & Fitch, Barnes & Noble, Foot Locker, JC Penney, Office Depot, Toys 'R' Us.
- UK customers at Aurora Fashion stores (Coast, Oasis, Warehouse and Karen Millen) able to use PayPal as well since May 2012.
  - Different solution for Europe with QR code and PIN.

There is still a long way to go for mobile payment technology

- NFC may function as a catalyst when it becomes widely available with the next generation of mobile phones.
- Alternatively, other NFC-free technologies could prevail.
- However, the success of any mobile payment scheme will depend on factors such as:
  - Ease of use
  - Transaction speed
  - Security
  - Smooth integration into POS systems

Retailers take over the helm

In March 2012, Walmart and Target joined forces with two dozen retailers to develop their own mobile phone payment system.

Walmart is one of the retailers that aim to launch their own mobile payment scheme.

6

The need for optimization

How can retailers raise profitability **without** selling more items?

The need for optimization

Driver corporate social responsibility – Food Waste

Food not being sold well in advance of its `best before´ date creates huge economical and ethical problems.

Globally 1.3 billion tons of food waste per year of which more than 40% occur at retail and consumer level.*

Improved merchandise management can help to reduce this figure by:

- Better forecasts
- Reduced inventory
- Timely mark-downs

* According to study for Food and Agriculture Organisation of the United Nations in 2011

Inventory optimization

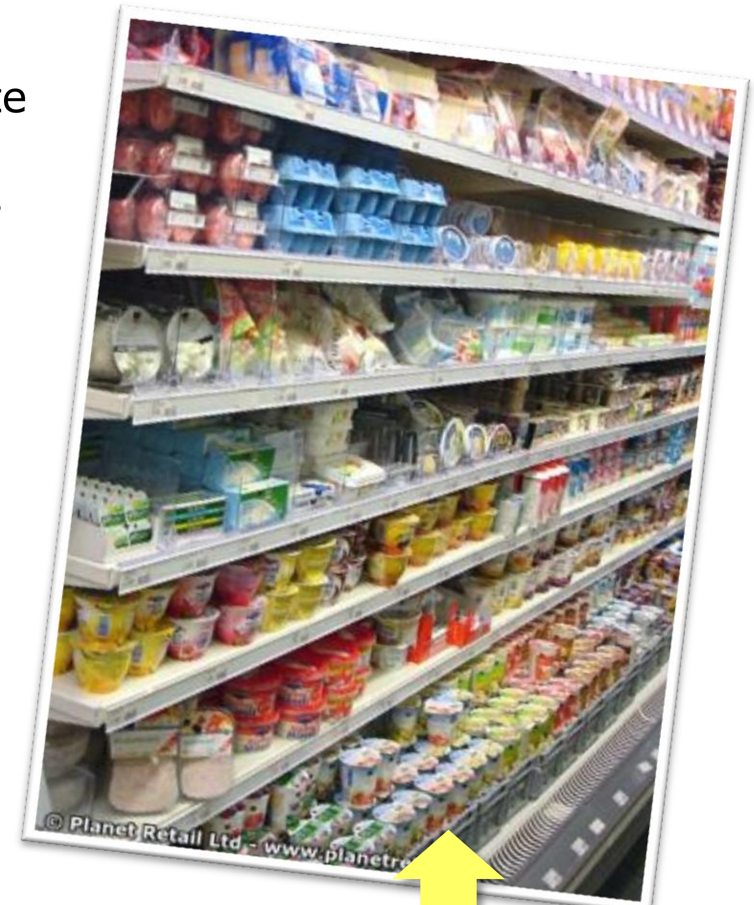
- Replenishment automation based on forecasting software - the retail technology success story for more than a decade:
  - Increased sales and improved shopper satisfaction;
  - Reduced waste, fixed capital and stock-keeping costs;
  - However, often limited to ambient range and processed chilled food;
- Inventory optimization for produce and instore produced food are on retailers' agendas now.

Retailers are saying:
"Our out-of-stocks rate decreased from 3.5 to 1% with 10-15% less inventory and 40% less workload with orders."

Rewe supermarket in Germany.

Retailers have started to use automated replenishment also for **fresh** products.

- Swiss grocery retailer Coop started to automate ordering of dairy, meat, convenience products, fruit and vegetables and fresh bakery products in April 2011;
  - Using the technology, Coop already reduced inventory of its ambient range by 8% while on-shelf availability has been increased;
  - Automated replenishment helped to plan deliveries at a much earlier stage and improved staff scheduling and route planning.
- At its fresh food division, Marks & Spencer forecasts at item level using new software for inventory management, replenishment and order planning



Coop started automated replenishment for fresh food in the dairy department.

Case study: Tesco uses **video analytics** to further calibrate the algorithms of its replenishment automation process.

TESCO

- In around 15 to 20 stores, Tesco installed cameras which continuously take pictures of shelves in the fruit & vegetable department.

- Combined with POS data, these snapshots help Tesco to get a better picture of inventory levels and further optimize forecasting algorithms.

While content of the pictures is captured automatically, analysis of the correlation between POS data and information gathered by the cameras is done by Tesco's staff.

Tesco Hypermarket New Malden, Surrey, UK

Case study: Tesco

TESCO

Weather forecasts further improve retailers' replenishment

- In summer 2009, Tesco in the UK set up its own six-strong supermarket weather team;
- The company developed a computer program which produces detailed weather reports going back five years and analyzes how weather affected Tesco's store sales.

A rise of 10 degrees Celsius led to a 300% uplift in sales of barbecue meat at Tesco.

Case Study: Ahold Albert Heijn tested mark-down optimisation to reduce losses from spoiled fruit and vegetables

- The food waste reduction program was launched in the retailer's store in Amersfoort in early 2010;
  - A price optimization engine compared predicted and actual sales of fruit and vegetables and analyzed expected deliveries and current stock levels;
  - Prices were marked down accordingly and communicated via Wi-Fi to 92 full color 15-inch displays;
  - Shoppers using mobile self-scanning devices received updated price information and cross-selling offers.

Dynamic pricing requires real-time inventory data

Albert Heijn's store in Amersfoort.

Promotion

Initial

NEW PRODUCT

Price Optimisation

Basic Line

Mark-down

Planet Retail's global top 10 technology providers to watch for price optimization

Note: Not ranked; does not include pure promotion optimisers.

Predictix

accenture
High performance. Delivered.

TERADATA
Raising Intelligence

revionics
REVENUE BIONICS

sas®

KSSRetail
a dunnhumby company

SAP Khimetrics

ORACLE®

IBM® DemandTec®

Retalix

Retailers are looking for...

Simulation Engine

Assortment

Space

Price

Replenishment

Integrated optimisation engines could revolutionize retail planning

Visibility on operational data is mandatory to enable a next generation of optimisation technologies.

Raising profitability

Reduced

- Fixed capital costs
- Inventory costs
- Out-of-stocks
- Waste

Increased

- Customer satisfaction

7

Warehouse Automation

Optimisation begins in the warehouse.

There are good reasons to invest into warehouse automation technology.

- Reduction of labor costs
- Ergonomics
- Reduction of transport costs
- Less shrinkage due to improved visibility of supply chain

Manually packed pallet.

Pallet packed with warehouse automation technology.

Source: SSI Schäfer

RFID speeds up fresh food logistics.

DELHAIZE GROUP

- Delhaize tracks transport boxes for fresh items with RFID between its Zellik DC, stores and the Euro Pool System service center.
  - Continuous localization due to scanning at various places within the supply chain.
  - Handling of boxes is facilitated by Witron's Dynamic Picking System (DPS).
    - Due to the new process, all fresh products are ready for sale on the stores' shelves within a maximum of 12 hours.

Delhaize's reason for investment:

- Increased focus on fresh food
- Trend towards smaller outlets

Some 70% of Delhaize's fresh food store deliveries are automatically handled by Witron's technology.

Delhaize developed its new reusable crates for fresh food in cooperation with Euro Pool System.

Many retailers have started to fully automate their DCs.

- Kroger was the first grocery retailer in the world to fully automate a warehouse in 2003.
- Spanish grocer Mercadona deploys warehouse automation technology in several facilities, also for fresh products.
- In 2012, Lidl is now the world's first discounter to fully automate a depot.

Kroger has already automated several DCs with technology from Witron

Lidl deploys the case picking system from SSI Schäfer.

Warehouse automation also has some drawbacks.

- It cannot be used for all products. Some items require manual or only semi-automated picking solutions due to their packaging (washing powder, toilet paper)

Good reason for a close cooperation between retailers and CPG companies to develop product packaging which

- Can go through an automated warehouse without being damaged
- Is easy to open in the store

Chips packed in unstable cardboard cases cannot be picked automatically.

This tray might be easy to open in the store, but is not stable enough for automated transport.

The world's first self-replenishing shelf.

- In August 2010, the self-replenishing shelf from warehouse automation specialist Witron made its debut in the E-Center in Weiden, Bavaria.
  - In a hidden aisle behind the shelf, a replenishment shuttle moves horizontally and vertically to carry out replenishment.
  - The shelf is connected to the store merchandise system.
  - Stock levels are taken with the help of scanners; employees are automatically alerted to re-stock the replenishment shuttle.

The shelf is 33 feet long.

The shuttle and the shelf are divided by blinds which go up when items are replenished from behind.

A horizontally and vertically moving shuttle carries out the replenishment.

8

The grocery store in 2020

The grocery store in 2020 – Planet Retail's vision

The hybrid shopping experience

The Grocery Store in 2020

Shopping starts at home
(…or wherever consumers fancy to do so)

- Shopping preparations via TV, PC, tablet or smartphone
- Scanning of empty packages
- Smart inventory management at home
- Experiences shared via social networks

Enabling Technologies:

- Online shop technology and apps
- CRM system
- Analytics and predictive technologies
- NFC / QR codes

The grocery store in 2020 – Planet Retail's vision

The hybrid shopping experience

The Grocery Store in 2020

Customers identify themselves when entering the store. This enables the retailer to apply personalized marketing tools. Shoppers are rewarded with better service.

- Check-in via smartphone or kiosk
- Upload of shopping list
- Personalized offers
- Reminders & alerts

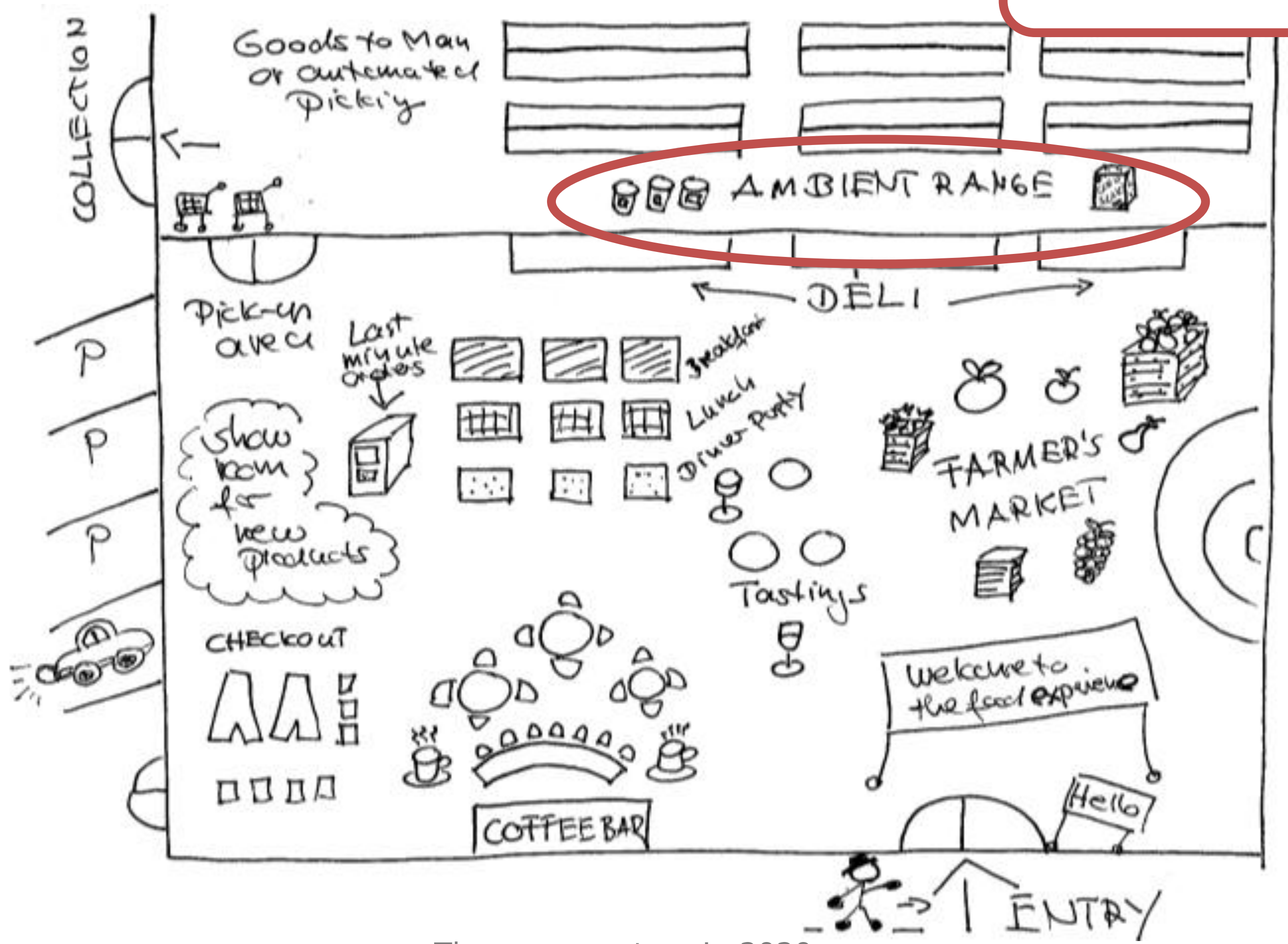
Enabling Technologies:

- Near Field Communication (NFC)
- CRM System
- Interactive Kiosks
- Tracking Systems

The grocery store in 2020 – Planet Retail‘s vision

The hybrid shopping experience

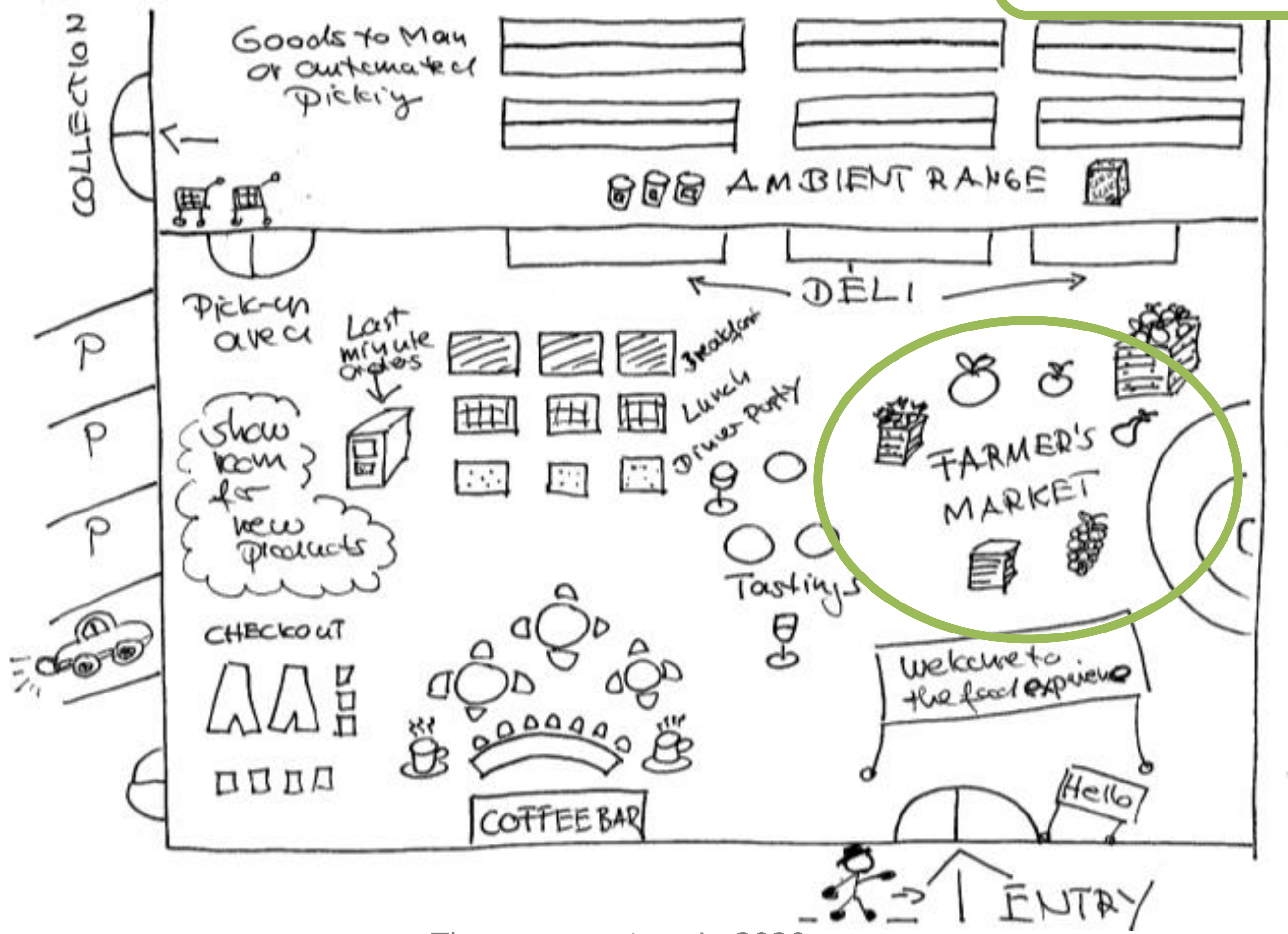
Automatically picked and packed



The grocery store in 2020 – Planet Retail‵s vision

Focus on fresh food

The hybrid shopping experience



The grocery store in 2020 – Planet Retail‘s vision

The hybrid shopping experience

Serviced counters

The grocery store in 2020 – Planet Retail‘s vision

The hybrid shopping experience

Solution oriented store layout

The grocery store in 2020 – Planet Retail‘s vision

Encouraging impulse buys

The hybrid shopping experience

The grocery store in 2020 – Planet Retail's vision

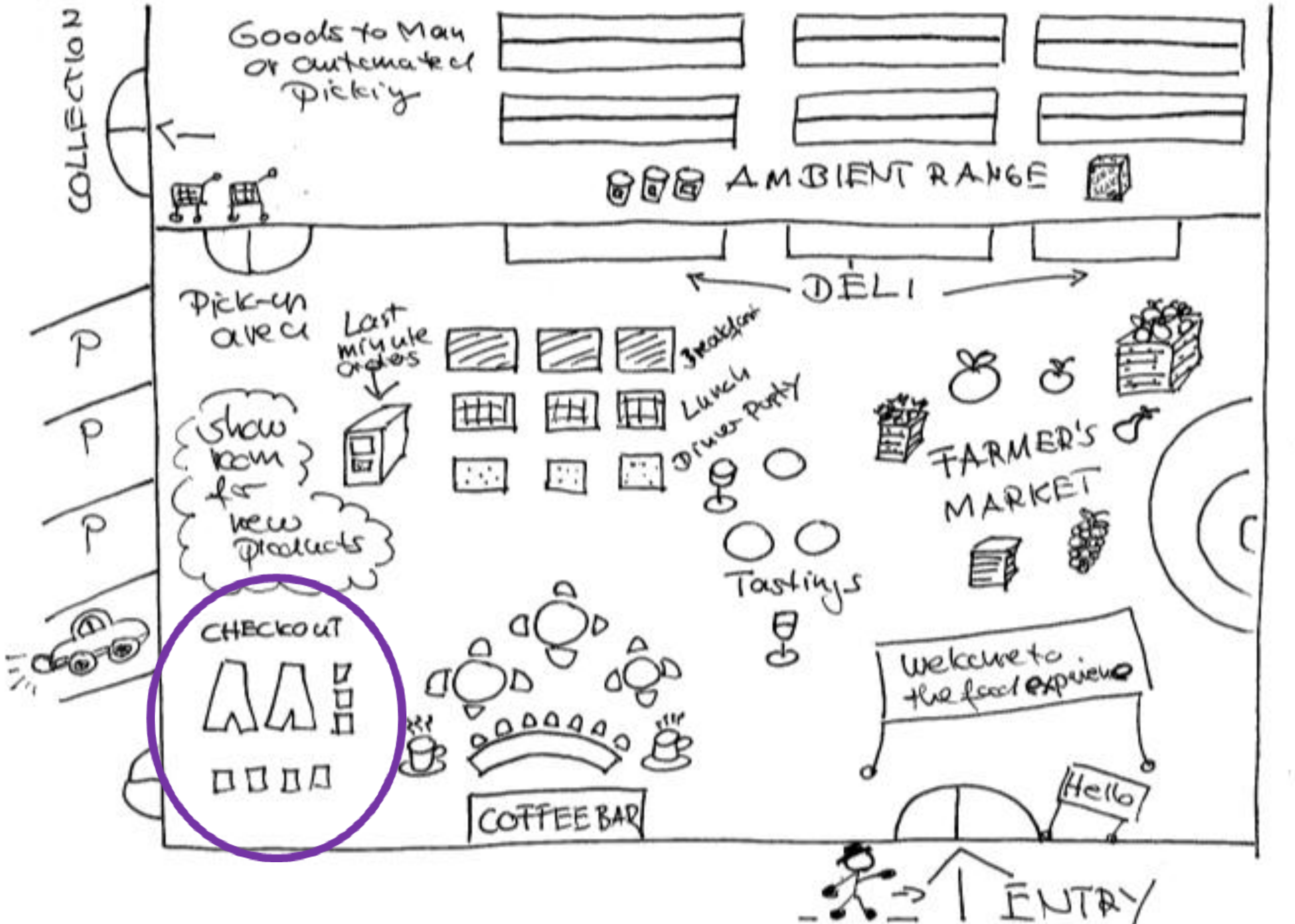
Last minute orders can be added on site

The hybrid shopping experience

The grocery store in 2020 – Planet Retail's vision

The hybrid shopping experience

Multiple checkout options



PlanetRetail
www.planetretail.net

The grocery store in 2020 – Planet Retail's vision

Supports `site to store´ as well as home delivery

The hybrid shopping experience

The Grocery Store in 2020

Customers shop for fresh food, new products and impulse articles in an experience-oriented environment, while other goods for daily needs will be automatically picked and packed.

- Friendly towards elderly and handicapped people
- Interactive and personalized shopping experience
- Supportive employees empowered by technology

Enabling Technologies:

- Wi-Fi and mobile networks
- NFC / RFID for non-food
- ESLs and digital signage
- Interactive kiosks
- Tracking systems and indoor navigation
- Self-checkout and cash recycling
- Warehouse automation

Retailing 2020 – What's on top of the CIO's to-do list

- Do your homework first
  - Master data management, 100% scanning, supply chain transparency,
- Enable real-time data access across all channels
- Create dedicated apps for different mobile devices:
  - For employees: inventory, customer service, task management, KPIs
  - For shoppers: scanning, product information, promotions, coupons, indoor navigation, payment
- Leverage optimization technologies: space, price, promotions and assortment
- Deploy analytics and predictive technologies to tap big data
- Enhance instore technologies
  - To enable new forms of consumer interaction
  - To better compete with online players

Technology Leadership Summit

FMI THE VOICE OF FOOD RETAIL

PlanetRetail

www.planetretail.net

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