

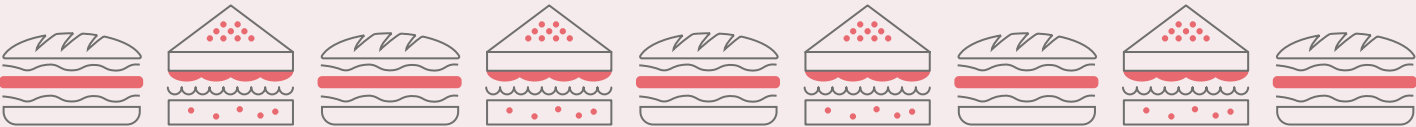
## Prospects for Intelligent Labeling Solutions for the Retail Food Industry



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# Introduction



## Objectives

To identify the key changes and drivers of intelligent labeling technologies at consumer, retail and manufacturing level and highlight the opportunities provided by RFID and related technologies for all companies in the supply chain



## Method

All data and insights drawn from GlobalData's Consumer Products and Innovations portals at a global level across Europe, North America and Asia

Emphasis on current consumer, retailer and brand owner views, trends and drivers



## Scope

Focus on the retail food channel and fresh and perishable foods

Including implications for the entire supply chain from consumer through retail to food manufacture and inventory control

## Consumer Trends and Drivers

- Demographics and geographies
- Growth in smartphone usage and connectivity
- Greater consumer engagement and interactivity
- Trust, transparency and convenience
- Authentication, brand protection and loyalty
- Complex supply chains
- Food spoilage and recalls

## Changing Shopping Patterns

- Omni-channel retailing and e-commerce
- Cost pressures, smaller stores
- Need adapt stock for online ordering
- Inventory management for omni-channel
- Grab and go and unmanned stores

## Intelligent Labels, Packaging and New Technologies

- Role of packaging in new environment
- Limits and current barriers to implementation
- Potential for new intelligent labeling solutions
- Assessment of potential supply chain solutions
- Advantages, disadvantages, areas of application
- Prospects for and barriers to success

## Conclusions and Recommendations

- What direction is the market heading and why?
- What are the key requirements from market, technology and partnership perspectives?
- What factors are critical to success?
- What are the key opportunities and benefits for food retailers and brand owners?

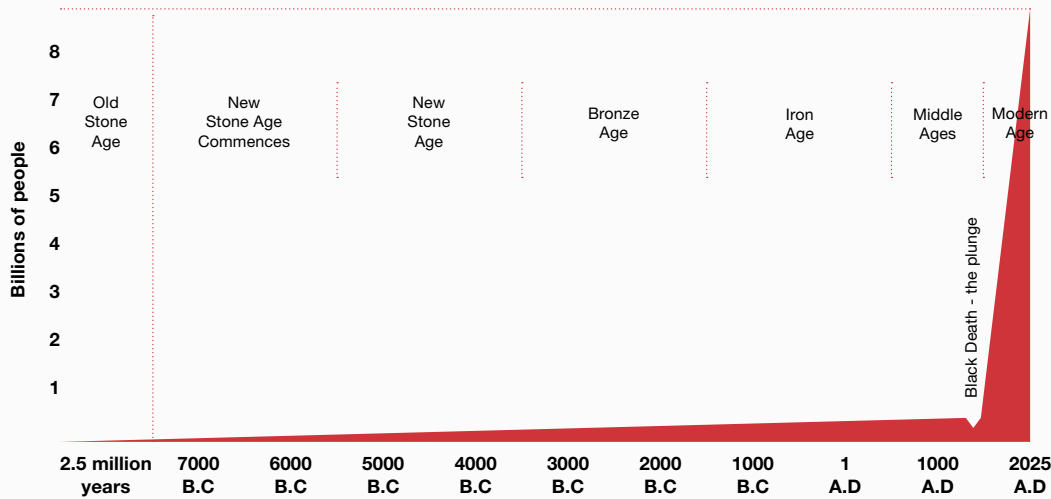
## 2. Consumer Trends and Drivers

- 
- Demographics and Geographies
  - Growth in Smartphone usage and connectivity
  - Greater consumer engagement and interactivity
  - Trust and Transparency
  - Convenience



# Demographics & Geographies

## World Population Growth Through History



*Long term, sustained population growth continues to underpin increasing consumption and packaging growth.<sup>1</sup>*

- Overcrowded markets
- Busier lifestyles
- Rising income levels
- Urbanization
- Aging and longevity
- More working women
- Smaller households
- Fragmented consumption

### This has resulted in:

- Globalisation – East vs West
- Rising environmental and health concerns
- Desire for differentiation
- Need for convenience
- Faster, complex supply chains
- Pressures to reduce costs and losses and improve efficiencies
- Increased fresh food channels

### Driving greater need for:

- Sustainable business models
- Smaller 'on-the-go' convenience stores
- Lightweight packaging
- Unique design
- Engaging packaging
- Brand protection
- Better inventory control



1. World Population: towards the next century, 1994

# Growth in smartphone usage and connectivity

## 4G / 5G

- Rapidly expanding ownership, coupled with improved technology, **wider broadband 4G/5G availability** and better apps are encouraging consumers to switch from ordering by computer to smartphones

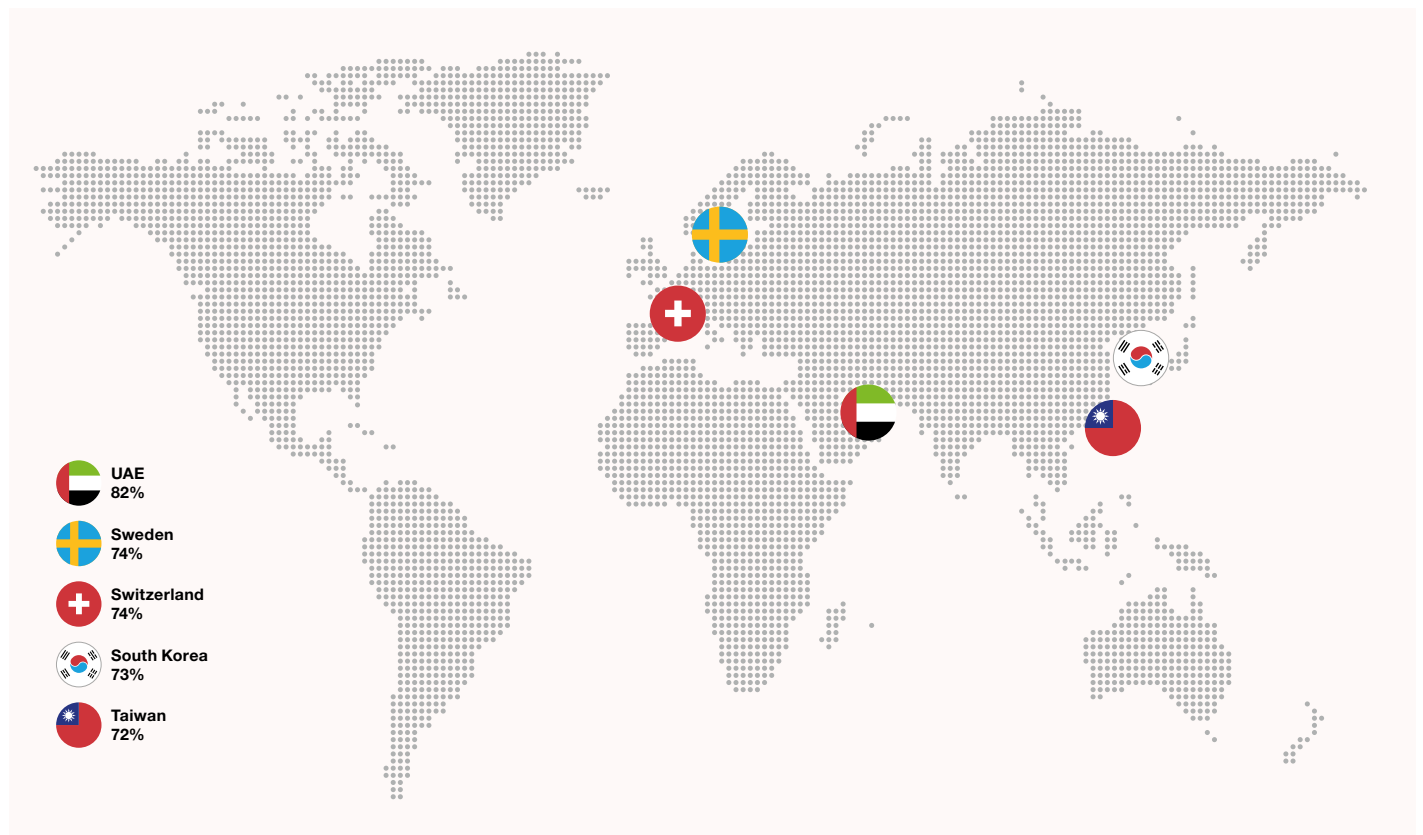
## 36%

- Global smartphone usage to reach **36% in 2018** from just 10% in 2011<sup>1</sup>
- The always-on “Connected Consumer” is becoming the norm
- Wireless smartphone payments starting to replace cash in some countries

## 51%

- **51% global internet penetration** in 2017 from 35% in 2013
- 42% of consumers have social media accounts<sup>1</sup>

## Which countries have the highest rate of smart phone penetration? <sup>2</sup>



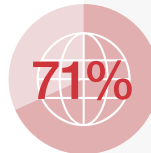
# Greater consumer engagement & interactivity

## Interactivity

- Direct digital interactivity between the consumer and the product is becoming a key means of encouraging brand loyalty and re-purchasing
- Points-based loyalty systems including special offers and discounts are increasingly important in determining purchasing patterns and product and brand choice
- Enhanced digital interaction between the product and brand via QR/AR codes and web-links further enhance consumer experience



of global consumers think interactive packaging is “essential, exciting or nice to have”. The challenge is to make interactivity go further as just 8% of consumers currently see it as “essential” <sup>1</sup>



of global consumers say that they find products customized to their individual health needs “interesting” <sup>2</sup>

## Customization

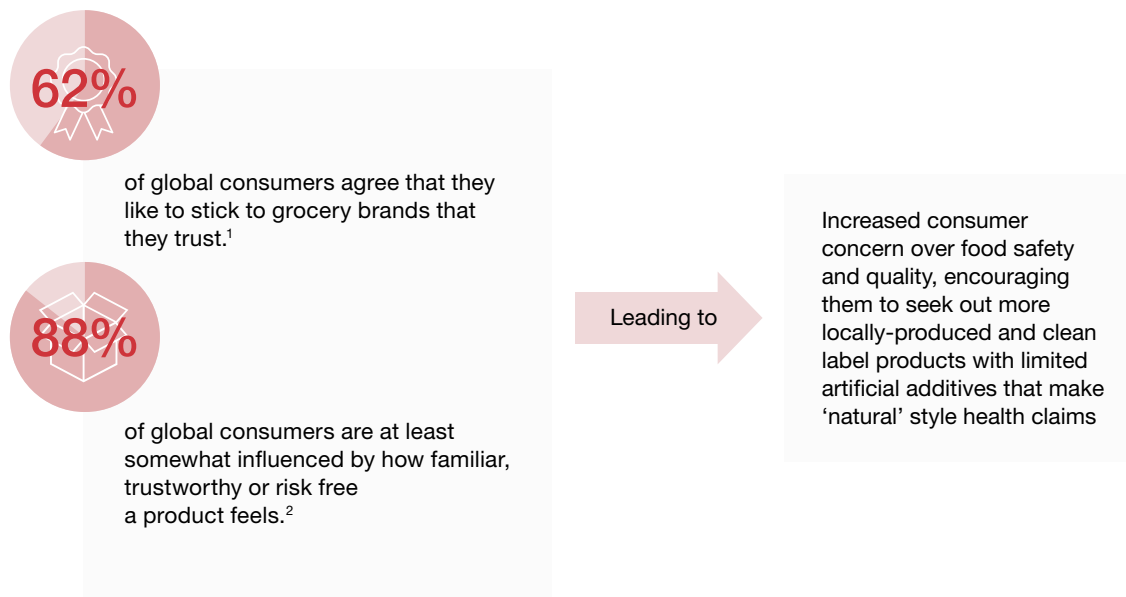
- Another way of encouraging engagement is to allow consumers to customize products to their own needs. These consumers are increasingly demanding products that they can personalize to their own needs



1. GlobalData's 2017Q1 Consumer Survey.  
2. GlobalData's 2016Q3 Consumer Survey

# Trust and Transparency

- Trust and transparency are increasingly important issues.
- Longer, globalized supply chains mean consumers have less visibility of food sourcing.
- Increased media coverage of food counterfeiting scandals and increased use of preservatives.



## Food Traceability Regulations



### Europe

- The EU is increasingly demanding better traceability regulations
- EU General Food Law entered into force in 2002 and makes traceability compulsory for all food and feed businesses
- In addition to the general requirements, sector-specific legislation applies to certain categories of food products (fruit and vegetables, beef, fish, honey, olive oil) so that consumers can identify their origin and authenticity, and on any GMO's



### USA

- Until 2002 US food industry traceability standards were governed by the "Bioterrorism Act" requiring only "one-step-forward, one-step-back" accountability in the supply chain
- The Food Safety Modernization Act of 2011, gave the FDA mandatory recall authority for food products
- These require full traceability and record keeping for designated high-risk foods
- The Institute of Food Technologists and others working with the government to establish more comprehensive traceability standards

1. GlobalData's 2017Q4 Consumer Survey.  
2. GlobalData's 2018Q3 Consumer Survey

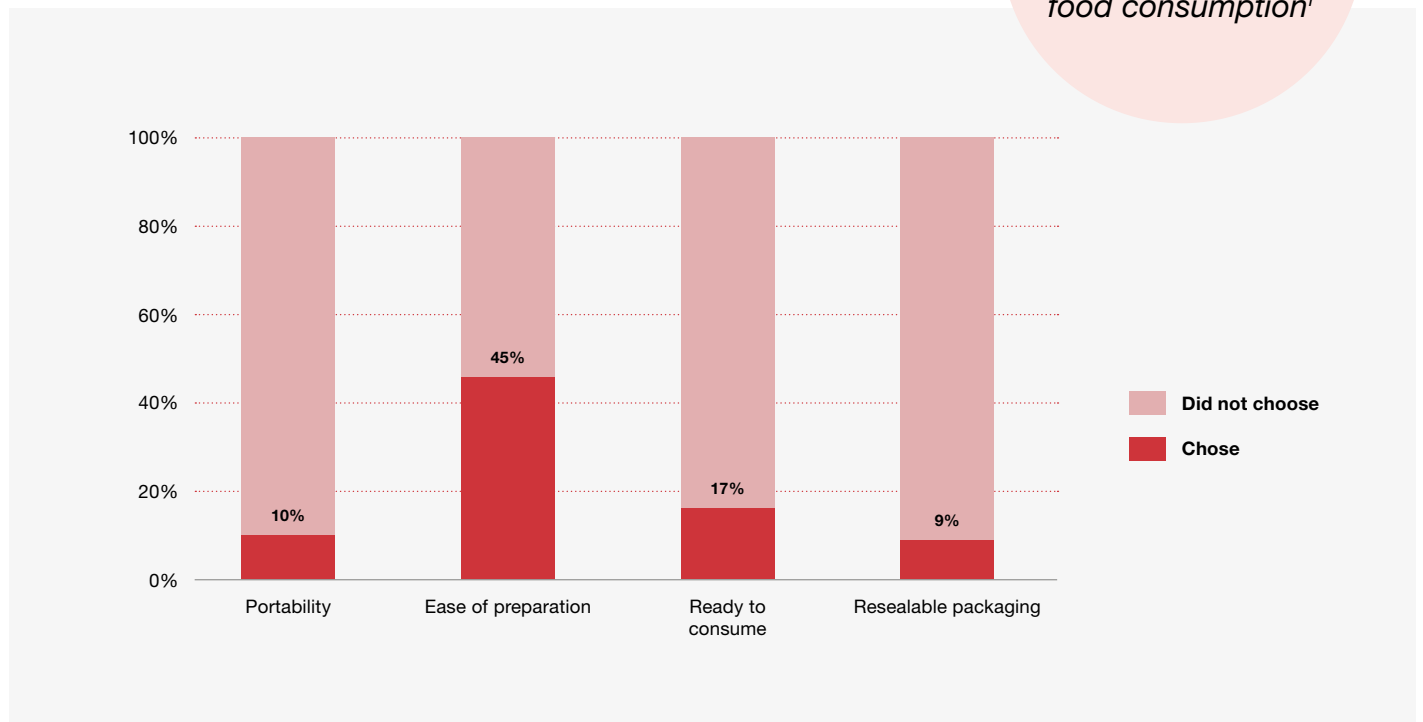


# Convenience

- Convenience is a rapidly growing consumer trend, driven by time scarcity, smaller household sizes and more food moving out of the home into social or commuting situations
- Producers need to make products more convenient to target this trend, both at home and outside the home

## Percentage of Global Consumers Prioritising Convenience Features<sup>2</sup>

**\$304bn**  
*The value of the time scarcity in global retail food consumption<sup>1</sup>*

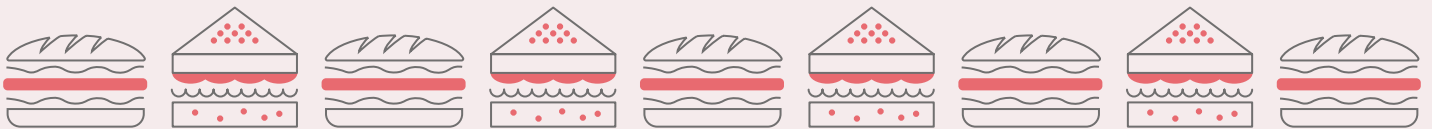


1. GlobalData's Consumer Graphics.  
2. GlobalData's 2016Q3 Consumer Survey

# 3. Changing Shopping Patterns

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- Changing shopping patterns are impacting packaging design
- Shopping and interacting with brands is getting easier than ever
- Rapid acceleration in development – the future is nearly here
- Competition from e-commerce
- Impact of omni-channel retailing
- Global food recalls
- Validation of UHF RFID use in food traceability
- Digitalization - rapid technological advances facilitate more complex shopping
- Smart packaging can offer better product-consumer interaction
- Driving consumer-product engagement through VR experience



# Changing shopping patterns are impacting packaging design

- Growth in self-service retail remains a primary driver of packaging demand
- Massive growth in online shopping as smartphone use has risen
- Bespoke e-commerce packaging on the rise but online packaging still far from optimised in terms of functionality and efficiency
- E-commerce also offers a route for engaging younger age groups – a key consideration to futureproof business operations
- Buy on-line, pick up in store models becoming the norm

## Rise of E-commerce

**Global: Consumers who find the ability to shop online most influential when deciding where to shop, by generation<sup>1</sup>**



Global  
21%



iGeneration  
26%



Millennials  
23%



Gen X  
22%



Boomers  
17%



Silent Gen.  
13%

## Retail landscape characterized by decline in traditional and rise of multi-channel retail

26%

**Decline in traditional retail**  
of global consumers shop for food/  
drinks online at least once  
per week or more

32%

**Growth in multi-channel players**  
of global consumers shop for food/  
drinks both online and in a store  
more than once per week or more

# Shopping and interacting with brands is getting easier than ever

## WHAT?

### Friction-free shopping

With advances like cashier-less stores and Amazon's Alexa voice assistant, friction is being removed from the FMCG shopping and buying

## WHY?

### Making the buying process seamless

Friction-free shopping is all about making the buying process as convenient (and in some cases as automated) as possible

## HOW?

### Redefining "ultimate convenience"

Recent friction-free shopping advances like voice activated ordering are redefining what ultimate convenience means



Signpost's "Super Wonder Register" uses cameras and AI software to track merchandise and purchases. Offers small footprint dedicated entry and exit points and can be used in any store



Amazon Dot – US; UK; Australia. Amazon's Alexa-equipped Dot enables voice-activated shopping



The Morrison's supermarket chain (UK) now accepts voice orders from Alexa

# Rapid acceleration in development – the future is nearly here

## WHAT?

**Multiple and varied new technologies are leading fast, radical, and lasting change**

Big Data, CRM, artificial intelligence, automation, virtual/augmented reality, smart homes, social media... the list seems endless - and growing

## WHY?

**We are already in the new digital age**

Concept-to-market times are getting shorter while consumer acceptance and adoption of new technology is faster and more widespread

## HOW?

**Embrace UHF RFID and NFC to engage with forward thinking consumers**

UHF RFID level tagging enables better supply chain efficiency, increasing food retailers competitive advantages  
NFC applications can be used across many sectors to better engage consumers' smartphones



Wearable Proof - world's 1st wearable alcohol intake measuring and monitoring device



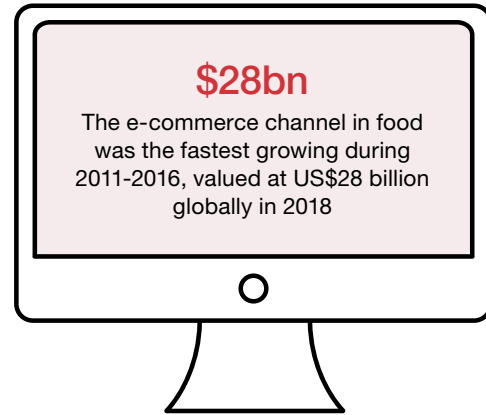
Smart appliances  
One-tap ordering



Drone Applications

# Competition from E-commerce

- Consumer time scarcity and desire for convenience are stimulating growth in the e-commerce channel for food
- In many countries dominant food retailers have quickly moved to establish themselves as the leader of this channel, but innovative e-commerce only outlets have also developed to compete with them



## Examples of E-commerce-only Companies



Farmdrop is a UK company founded in 2012 that connects consumers directly with farms through a proprietary app. It gives information to consumers about the sourcing of its' food, with plenty of organic options, and already had 30,000 active users in 2017. It received its' latest round of funding at £10million in June 2018



This grocery company aims to differentiate itself with a same day or next day service, with an easy to use app and personal shoppers delivering to consumers after buying from retailers at a discounted price. The company is now valued at over \$7 billion and has expanded into a range of US and Canadian cities



Available across a limited number of US and major international cities, this service partners with a local retailer to offer its' food alongside Amazon products for delivery. It is available as part of a membership subscription

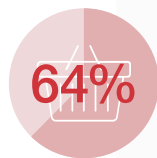


# Impact of Omni-channel Retailing

- To counter the challenge from dedicated e-commerce outlets, many food retailers have added e-commerce arms to their standard 'brick and mortar' offerings
- Omni-channel retailing brings new challenges to retailers who have to balance:
  - > the desire to price products consistently and offer a standardized product offering across all platforms for brand consistency
  - > the need to recognize that different channels have different costs and all parts of the business need to be profitable

## Smaller Stores

- Food retail is reorienting towards smaller 'convenience' stores to better meet consumer demand
- Consumers increasingly wish to purchase in stores near to their home or place of work, often in small quantities and at shorter notice



of global consumers say they prefer to do smaller shopping trips rather than buying in bulk. This is at odds with hypermarket/large supermarket models which dominate many food retail markets<sup>1</sup>

- To avoid being outmanoeuvred, major supermarket chains around the world are shifting to smaller size stores
- Retailers have both shrunk their existing store footprints and launched new smaller store formats
- Though there is less choice available, stock turnover is often more rapid and the ability to cater for occasional new products is improved



## March 2019

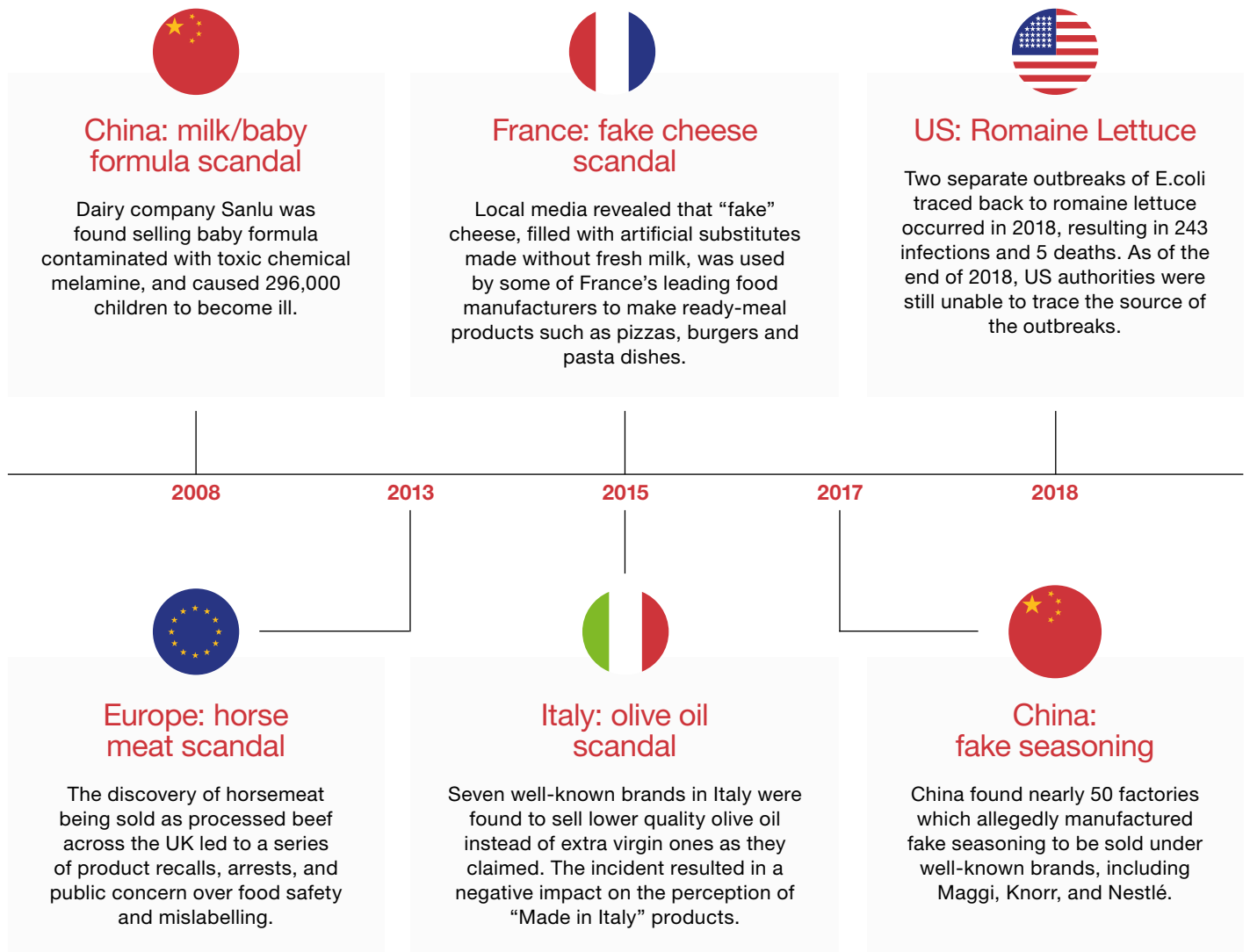
After several attempts to enter the e-commerce market itself, M&S announces a partnership with Ocado in March 2019

The move is seen as 'transformational' the move is aimed at enabling M&S's full food range to go online and is tied in with a store renewal program



# Global Food Recalls

Food recalls have become a major problem as the lengthening of supply chains to a global scale has led to reduced visibility and opportunities for criminal elements in the supply chain to save money by counterfeiting ingredients or formulation techniques





# Validation of UHF RFID Use in Food Traceability



- According to the World Economic Forum<sup>1</sup> new technologies can increase safety, quality and traceability and reduce food waste by up to 7%
- By implementing an assigned unique identifier to the individual food product for tracking along the supply chain; examples include UHF RFID and serialized barcodes



- By increasing transparency into food value chains, traceability can affect food systems in the following ways:
  - > Meet consumer demand for food production transparency
  - > Enhance the ability to identify, respond to and prevent food safety issues
  - > Support supply-chain optimization and reduce food loss.
  - > Validate sourcing claims to support sustainability goals<sup>1</sup>



# Digitalization - Rapid technological advances facilitate more complex shopping

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## Products Born Digital

Dependence on digital platforms and smart tools is growing as they fulfil expanding roles in consumers' lives

31%

of consumers find interactive packaging (e.g. using smartphone) an essential or exciting packaging feature

25%

of global consumers use digital tools to monitor or manage food/drink consumption – a further **35%** would consider using them in future

## Informed Shopping

Savvy consumers are making more informed and discerning purchasing decisions using digital platforms and tools

79%

of consumers say they check prices online before making a purchase

55%

of consumers say they are more likely to trust blogger/user reviews over brand claims

# Smart packaging can offer better product-consumer interaction

## Sprite



- Can with thermochromic inks that change the pack design as the drink warms up after being taken from fridge
- The can features the Shazam logo which, when scanned with a mobile using the Shazam app, redirects to a Sprite-themed video

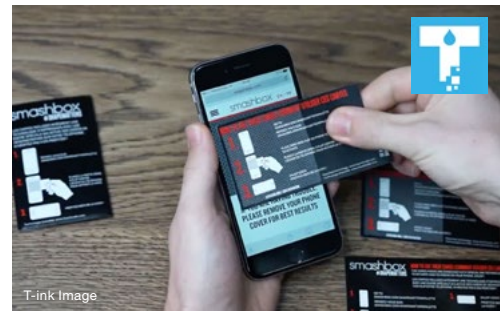


Sprite Image

## T-ink's Touchcode smart packaging



- Designed to protect against counterfeiters
- Invisible electronic code printed on paper, cardboard, film, or labels
- Using a combination of conductive ink and software to create packaging interaction with any touchscreen



T-ink Image

## Francesco Rinaldi AR app



- Consumers can interact with brand mascot Mrs. Rinaldi by downloading an AR app on their smartphones. The character will begin to tell the story of the product on their mobile.



Francesco Rinaldi Image

## Inductive Intelligence's heat anywhere packaging



- This recent packaging design utilizes wireless charging, RFID/NFC labels, heat sensors and a smartphone app to allow for on-the-go heating of single serve food packs.



Inductive Intelligence Image

# Driving consumer-product engagement through VR experience

## Cantine Ronco Wine



- Offers an VR experience via QR code
- The QR code and message printed on the pack encourages the consumer to download the Crisp Attack app and play with augmented reality linked to the pack



## Red Bull Celebration Pack



- This multi-pack converts to a VR headset
- Consumers are encouraged to visit a special brand website and wear the VR glasses to experience the “world of festivals come to life”



## Authentication and Anti-counterfeiting are key triggers of initial deployment

### Spectra's Illuminate anti-counterfeiting packaging, UK



- Launched in 2017 by Spectra Packaging to help combat counterfeiting
- “Illuminate” glows brightly under ultraviolet light, yet isn't easily visible under normal lighting conditions
- Design combines attractive pack appearance with high-level security to avoid counterfeits that undermine brand identity and authenticity



### Wine Blockchain: from grape to bottle



- Avery Dennison's intelligent label solutions combined Everledger's blockchain platform with Near Field Communication (NFC) technology
- Highly-secured, non-copy and tamper-resistant inlays are adhered to the labels, giving each bottle a unique digital identity
- Enables chain-of-custody data to be captured throughout the supply chain



# 4. Intelligent Labels, Packaging and New Technology

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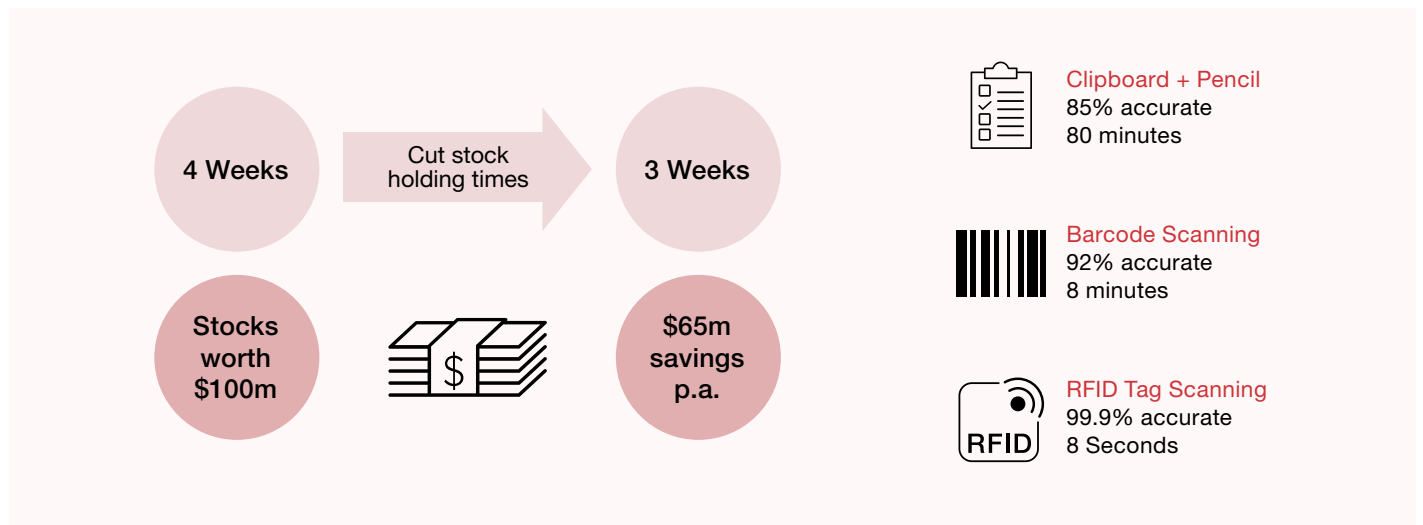
- Better inventory control and accuracy
- Potential for intelligent labeling solutions - how barriers can be overcome
- Assessment of the Impact of Technology in the Food Industry



# Better inventory control and accuracy

The costs of an inefficient inventory system can be large, and technology is opening new doors for producers to limit these with inventory tracking and immediate access to delivery dates & suppliers.

## Cutting rolling stock times with RFID inventory control systems<sup>1</sup>



## For food retailers, inventory management provides additional challenges:

- Food needs to be tracked as accurately as possible throughout its' assembly and distribution in order to work out the potential spread of any defective ingredients and protect the health of consumers
- For perishable foods time from farm to plate needs to be minimized to ensure the longest possible sell by dates for consumers, meaning planning ahead and clever inventory management is needed to ensure sufficient stock levels at all times



# Potential for new intelligent labelling solutions

## How barriers can be overcome



### 1. Use technological innovation to lower the costs of intelligent labels.

This will help ensure it is commercially viable for smaller suppliers, increasing the effectiveness of the data gathered by all in the supply chain



### 2. Design tags such that useful, actionable data on the supply chain can be gathered.

Retailers face a constant balance between offering customers a good range of products and limiting wastage, so effective inventory management is important; RFID labels that can be integrated in the food supply chain offer the potential to resolve this issue



### 3. Enable traceability and anti-counterfeit solutions.

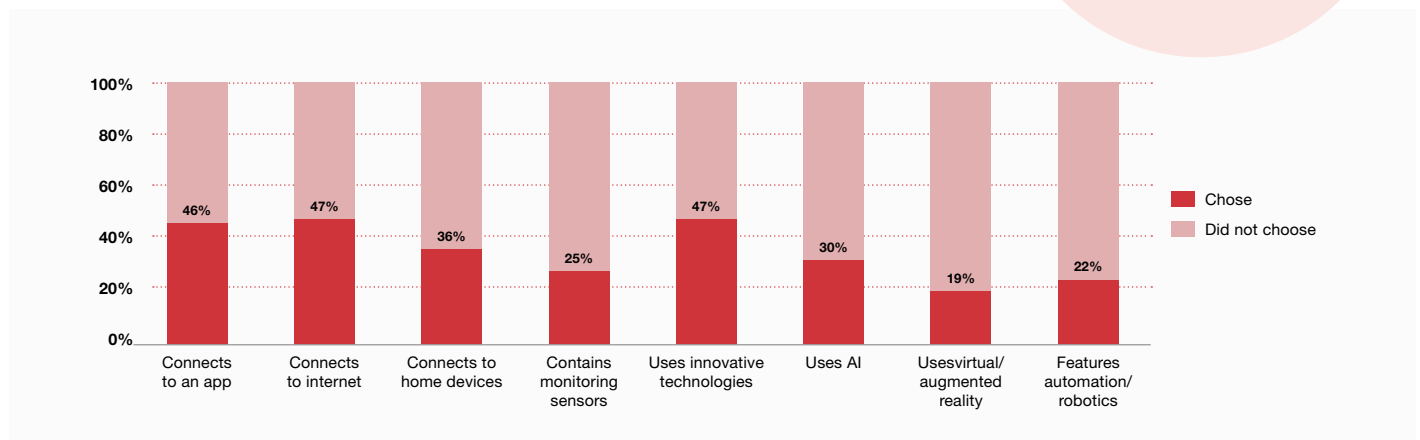
Another need for RFID labels is through its' ability to act as a food tracing system. The number of recent food scandals around the world means retailers are alert to the need to account for every stage of their long supply chains to have full product information access and accessible data in event of product recalls

## The role of 'Smart' packaging in new commercial environment

Many changes are technologically driven, but increased consumer demands around health, interactivity and personalization also open clear opportunities for 'Smart' packaging to make products more competitive, through QR codes, social media interactivity, augmented reality or product monitoring technologies

*How can intelligent labels solutions overcome implementation barriers and successfully integrate into the food retail channel?*

## Factors that consumers believed made a product 'Smart' <sup>1</sup>



# Assessment of the Impact of Technology in the Food Industry



## UHF RFID

**Opportunities:** Provides excellent item level tracking and better supply chain visibility for improved inventory management and product traceability

**Challenges:** Needs supply chain cooperation and label costs have historically proven prohibitive

**Prospects:** Strong, the cost of RFID has decreased over the last decade, making it more accessible to numerous industry sectors including retail and food service



## Blockchain

**Opportunities:** A decentralised ledger that makes all parts of a process clearly accountable, reducing friction in transactions or creating transparency

**Challenges:** Excessive energy and processor usage, inflexibility of smart contracts, poor understanding (confusion with cryptocurrencies)

**Prospects:** Strong in consumer supply chains



## NFC

**Opportunities:** A method of wireless data transfer that is power efficient and widely accessible to consumers

**Challenges:** Need for close proximity means large scale industrial use could be costly or labor intensive, concerns over data privacy

**Prospects:** Medium, remains to be seen whether it is more convenient for consumers than existing payment and consumer engagement options



## Internet of Things

**Opportunities:** Consumer convenience, automation of complex industrial processes for increased efficiency

**Challenges:** Requires substantial capital investment to develop for every different use case, consumer data/personal privacy concerns

**Prospects:** Extremely strong, in combination with AI will likely to revolutionize consumer and industrial world



# 5. Summary and Conclusions

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- What direction is the market heading in and why?
- What are the implications for technology?
- Intelligent Labeling Solutions - Key Benefits and Drivers of Success



# What direction is the market heading in and why?



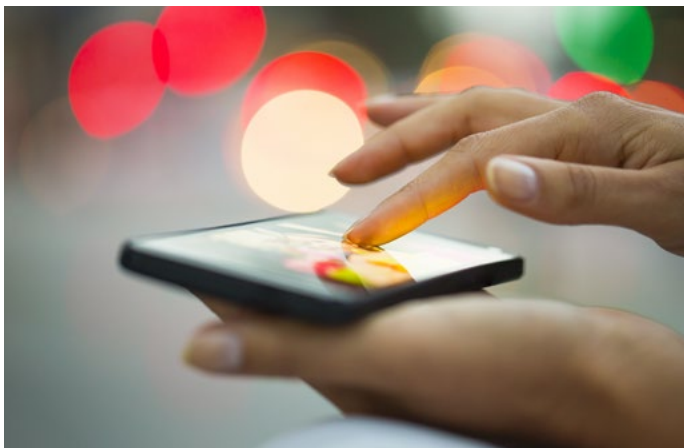
## Changing Consumer Demands

- Growing and increasingly crowded market, urbanization and rising incomes are driving demand for individualization, differentiation and interaction
- Smartphone growth becoming ubiquitous in many developed and developing market. Wireless payments replacing cash
- Digital interaction between the consumer and the product via the pack is becoming a key means of marketing, encouraging loyalty and re-buy
- “I made it trend” - consumers actively looking for greater engagement and experience with the product to create unique identity
- The decline in traditional advertising media, is creating a need for closer on-pack product and consumer interaction



## Changing Retail Environment

- Rapidly accelerating growth in e-commerce – traditional bricks and mortar stores are now feeling the effects
- More extensive of promotions, price discounts and loyalty schemes driving the expansion and continued disruption by discounters
- The e-commerce channel for food has been the fastest growing channel between 2011 and 2016 and is still in early adoption stage
- Strong downward pressures on retail prices and margins, driving demand for quicker, lower cost , more efficient and convenient shopping – e.g. cashier-less friction free and voice ordering
- Traditional retailers must embrace e-commerce to fulfill consumer needs



# What are the implications for technology?

## Technical Requirements and Capabilities



### Supply Chain

Longer, global, more complex supply chains creating need for better visibility, authentication, tracking and tracing and anti-counterfeit systems



### Loss Reduction

Stronger need to monitor inventory and track food products throughout the supply chain to minimise food spoilage and meet faster speeds to market



### Engaged Consumer

Rapid technology advance and Smart Packaging is creating a more informed consumer and desire for better consumer/product engagements

Leading to



### Wider need for intelligent labels integration with technologies like UHF RFID, NFC and QR codes

To provide a means for better and more efficient inventory control and food tracking and tracing throughout the entire supply chain from farm to fork

# Intelligent Labelling Solutions - Key Benefits and Drivers of Success



## Key Benefits for Retailers and Brand Owners

- Greater consumer engagement, loyalty and re-buy
- More convenient, quicker and efficient shopping via cashier-free tills
- Improved on-pack messaging, advertising and opportunities to personalize and engage the consumer
- Better inventory control, improved supply chain efficiencies and cost reductions to reduce stock mishandling, support retailers with their eCommerce models and make time and labor savings
- Generate higher sales and margins by integrating supply-chain, product and customer experiences



## Key Requirements for RFID Success

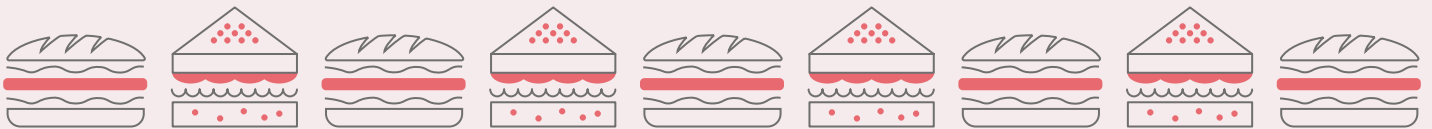
- Provide high added functionality and better consumer engagement
- Be relatively low on-cost and compatibility with retail POS systems
- Provide quantifiable benefits to supply chain efficiencies, quicker time to market, and better tracing and tracking, brand protection and anti-counterfeiting
- Enable closer working relationships between all members of the supply chain
- Integrate seamlessly into existing packaging and filling lines at speed
- Be compatible with or assist post consumer-waste recycling and systems



## 6. Case Studies

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- RFID Case Study – #1 Large Diversified Cash 'n' Carry Group
- RFID Case Study – #2 Large Modern Retail Chain
- RFID Case Study – #3 Large Global Meat Packer
- About GlobalData
- About Avery Dennison intelligent labels



# RFID Case Study #1

## Large Diversified Cash 'n' Carry Group

Potential to replace manual with digital systems



### Experiences

- 4th largest retailer in the world by revenue
- Currently it does not use digital tracking system in the supply chain
- Refrigeration is used to minimize food spoilage
- Manual/visual checks of sell-by dates are also used as shelves are refilled
- CCTV systems are used for theft prevention



### Challenges

- In-store theft of high value goods
- High labor costs related to sell-by date checking
- High cost of CCTV monitoring
- Interest in using RFID and more advanced systems
- Lack knowledge on the options and costs
- Costs of implementing a new RFID based infrastructure seen as expensive
- Intelligent label on-costs high for low cost items



### Success Factors

- New systems need to provide specific added functionality and/or efficiency improvements
- Need to have better control of inventory and stock levels in supply chain
- On-costs need to be justified
- Consumers increasingly need more information and transparency on the pack



### Solutions

- Interested in using RFID and advanced systems
- Future need to move away from manual processes to more automated solutions
- Solutions need to be simple, effective and low cost
- Systems that can better monitor temperature change, spoilage and product tracking are desired
- In-store theft is a problem requiring a solution

# RFID Case Study #2

## Large Modern Retail Chain

Leading French retail group piloting blockchain systems



### Experiences

- One of France's largest modern retail chains
- 80% of its business is food and beverage products (incl. fresh foods), 20% non-food FMCG
- Security, spoilage and theft are major issues
- Standard 14 digit barcode systems is used to track products in the supply chain to the store
- System is regarded as a low cost, easy system that works with their existing readers and equipment



### Challenges

- Key feature is that they operate a number of different store formats- this means that a variety of different solutions are often required
- Integrated blockchain inventory management system and supply chain already piloted in the Paris region using LoRa/CVS
- Labor costs of attaching RFID labels to individual items in store is relatively high



### Success Factors

- Need for fast payment, "grab and go" systems
- Smart checkout already introduced in all hypermarkets- creating significant labor savings
- Some pilots also carried out in China
- Aimed also at recording more detailed data on consumer purchasing patterns
- Data to drive promotions and personalization
- RFID seen as expensive for many FMCG items



### Solutions

- RFID can benefit labor management
- Wider adoption of RFID at item level is welcomed
- Improved consumer engagement a key driver
- Systems need to address multi-channel retailing
- Integration with existing systems is critical
- Post-use recycling and sustainability issues need to be considered
- Better inventory control, record keeping and efficiencies can offset on-cost of RFID

# RFID Case Study #3

## Large Global Meat Packer

Food safety and spoilage issues drive need for improved tracking systems



### Experiences

- The world's largest meat packer
- Primary focus on food safety
- Revenues loss but also potential legal redress
- Food spoilage also a key concern
- Temperature control and packaging play key role
- RFID currently used only for outer boxes
- Item level tracking and tracing currently based on barcodes and sell-by dates



### Challenges

- Aware of advantages of RFID systems over barcodes for item level identification
- But lack knowledge as to the specific options
- Work to very tight margins on meat products
- RFID labels seen as prohibitively expensive
- However labor costs with current barcode system are also high



### Success Factors

- Strong interest in exploring new technologies
- But need to identify a real use food application
- Use of RFID for outer box tracking has improved spoilage levels in the supply chain
- Lower cost systems, are likely to drive the wider use of RFID for item level packaging in the future



### Solutions

- Low cost solution required
- Any RFID system needs to integrate easily with existing high speed filling lines
- Demands for higher levels of automation and need for item level tracking to encourage drive for wider RFID use
- Encoding and price are the key drivers of adoption



# About GlobalData

4,000 of the world's largest companies make better and more timely decisions thanks to our unique data, expert analysis and innovative solutions delivered through a single platform



## Our Solutions

GlobalData provides a range of ways that clients can access our data and insights to meet their individual business needs:

- Intelligence Center
- Consulting Services
- Reports



## Our Industry Coverage

Our services cover five primary industries:

- Consumer
- Retail
- Technology
- Healthcare
- Financial Services



## Our Value Proposition

We empower clients to decode the uncertain future they face by providing:

- Unique data
- Expert analysis
- Innovative solutions
- One platform



## Our Expertise

- Market Intelligence
  - > Market Forecasts
  - > Competitive Intelligence
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# About Avery Dennison Intelligent Labels

Avery Dennison's intelligent label solutions bridge the physical and the digital, enabling businesses to add digital connectivity to any item. In industries as diverse as apparel, beauty, food and aviation, Avery Dennison RFID inlays and other digital trigger technologies give items a unique digital identity, enabling them to connect to the internet and deliver greater capabilities for companies and consumers alike. For companies, our intelligent labels make inventories more visible and more productive, while providing greater insight into consumer behavior and preferences. For consumers, our intelligent labels enhance experiences and make shopping more satisfying, informative and fun. For the planet, they increase sustainability by improving transparency and reducing waste across the supply chain and making the disposal of products more responsible. Learn more at [averydennison.com](http://averydennison.com)

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| <p><b>The world's largest UHF RFID partner with 25 years experience in china market</b></p> | <p><b>Our proprietary smartface® technology is one of the most sustainable solutions on the market</b></p> | <p><b>1000+ patents and applications worldwide</b></p>                              | <p><b>Integrated food solutions</b></p>  | <p><b>Global capabilities</b></p>   |
|           |                         |  |  |  |



[averydennison.com/rfid](http://averydennison.com/rfid)

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