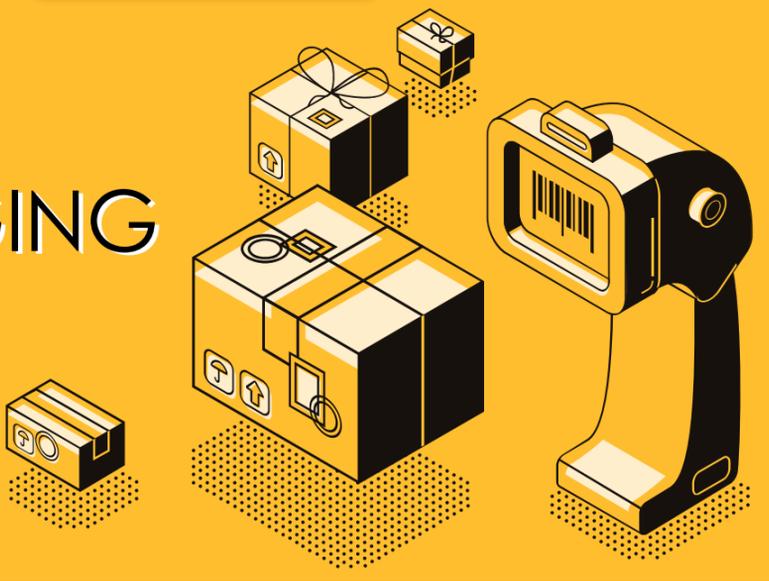# SMART PACKAGING

Changing consumer preferences, intent to curb wastage and regulations governing the safety of consumers and traceability of products are the key factors influencing the demand for smart packaging especially within the F&B and Pharmaceutical sector

Form of packaging adopting the advancements in technology to provide improved functionalities such as increased shelf life, monitor freshness, display information on quality and improve customer and product safety

## DRIVERS

| Demand for increased shelf life | Rising health consciousness among end users | Stringent government regulations on food and product safety | To tackle growing counterfeiting and tampering issues |

## KEY TECHNOLOGIES IN USE

| Cloud | Sensors | Barcodes | QR code |

## TYPES OF SMART PACKAGING, MARKET STATUS & CURRENT AREAS OF ADOPTION

### ACTIVE PACKAGING

- Emphasizes on product life & prolonged shelf life
- Uses gas scavengers, corrosion control, moisture control, and others

**Matured Market**
F&B    Pharma

### INTELLIGENT PACKAGING

- To monitor the condition of packaged product and to deliver information on the quality during transport & storage
- Uses gas detectors, thermochromic inks, time temperature indicator, and radiofrequency identification (RFID).

**Developing**
Agriculture    Industrial    F&B    Pharma

### MODIFIED ATMOSPHERE PACKAGING

- Aims to extend the shelf life of fresh food products
- Functions by replacing the atmospheric air inside a package with a protective gas mix

**Matured Market**
F&B    Pharma

## BENEFITS

**USER EXPERIENCE**
- Access
- Usage
- Interaction & Satisfaction

**PRODUCT INTEGRITY**
- Authenticity
- Security
- Quality & Safety

**INVENTORY MANAGEMENT**
- Traceability
- Agility
- Sustainability

## FORMS OF SMART PACKAGING

**1 Compliance packaging**
- Pharma companies use compliance packaging to track the dosage of medicines consumed by the user using GSM network
- It alerts the user in case he forgets the medicine via automated alerts

**2 Self Heating packaging**
Self heating packaging containers which helps consumers to heat the food products without having to use any external sources

**3 Multi Sensorial Packaging**
Facilitating brands to influence customers purchasing decision by tapping on the different senses (taste, smell, sight and sound). Also aids brand loyalty owing to the customers being able to recall the sensory impressions conveyed by the brand

**4 Oxygen Scavenger Technology**
Oxygen scavenger technology is gaining significance since it limits the rate of spoilage of food by extending its shelf life & maintaining the quality of food

**5 Antimicrobial Packaging**
Inclusion of active ingredients and/or actively functional polymers in the packaging to kill or inhibit spoilage and microorganisms involved in contaminating foods

## KEY DEVELOPMENTS...

| amcor | IoP MAGIC ADD | timestrip the smart way to measure time & temperature |
| - Amcor MaQ's barcode feature helps consumers interact with brands to understand product features and also helps the brand to get real time feedback | - MagicAdd updates information about the product to the cloud which enables tracking along any node of the supply chain | - A simple, visual and cost effective reminders for any time driven events and is highly accepted within the Pharmaceutical, Life Science and F&B sector |

## ABOUT DATAMATICS BUSINESS SOLUTIONS LTD.

Datamatics Business Solutions Ltd. (DBSL) is a pioneer in providing intelligent Business Process Management (iBPM) services.

Our integrated offerings include; Database Solutions & B2B Marketing, Demand Generation & Sales Acceleration, Business Research, Finance & Accounting Outsourcing, Payroll and Contact Center Services. We leverage emerging technologies like Robotics, Machine Learning and Artificial Intelligence to power human-machine collaboration & enable seamless delivery. As a trusted partner to Fortune 1000 companies; our focus is on driving revenue growth, operational excellence, cost efficiency & customer intimacy for global clients.

We serve customers across the globe and industries like Technology, Banking & Financial Services, Media & Publishing, Events, Manufacturing, Healthcare, Automotive, Retail & CPG, Travel & Logistics and Telecom.