

# GS1 and the Internet of Things (IoT)



## THE STORY OF IOT BEGAN IN 1999....



The term “Internet of Things” was first used in 1999 by the Auto-ID Centre at the MIT



In 2003, Auto-ID Center released “Electronic Product Code” (EPC) standard based on RFID tags, unique identification & internet technology. EPC was transferred to EPCglobal® formed by GS1 for development & management to realize IoT



EPCIS, a global GS1 standard for creating & sharing visibility event data within and across enterprises, was first ratified by EPCGlobal® in 2007



In 2008, GS1 HK launched an IoT platform “ezTRACK™” based on EPCIS to enable end-to-end supply chain visibility



## THE FOUNDATION FOR IOT - COMPONENTS OF EPC TECHNOLOGY

### Electronic Product Code™ (EPC):

The global RFID standard for numbering, providing a unique number to identify a specific item (object ID). It works with Radio Frequency Identification (RFID) technology and global communications networks, to track-and-trace goods as they move through the global supply chain.

### Radio Frequency Identification (RFID):

The wireless use of electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags attached to objects.

### Object Name Service (ONS):

An automated networking service similar to the Domain Name System (DNS) that points domain names to websites on the internet.

### Electronic Product Code Information Services (EPCIS):

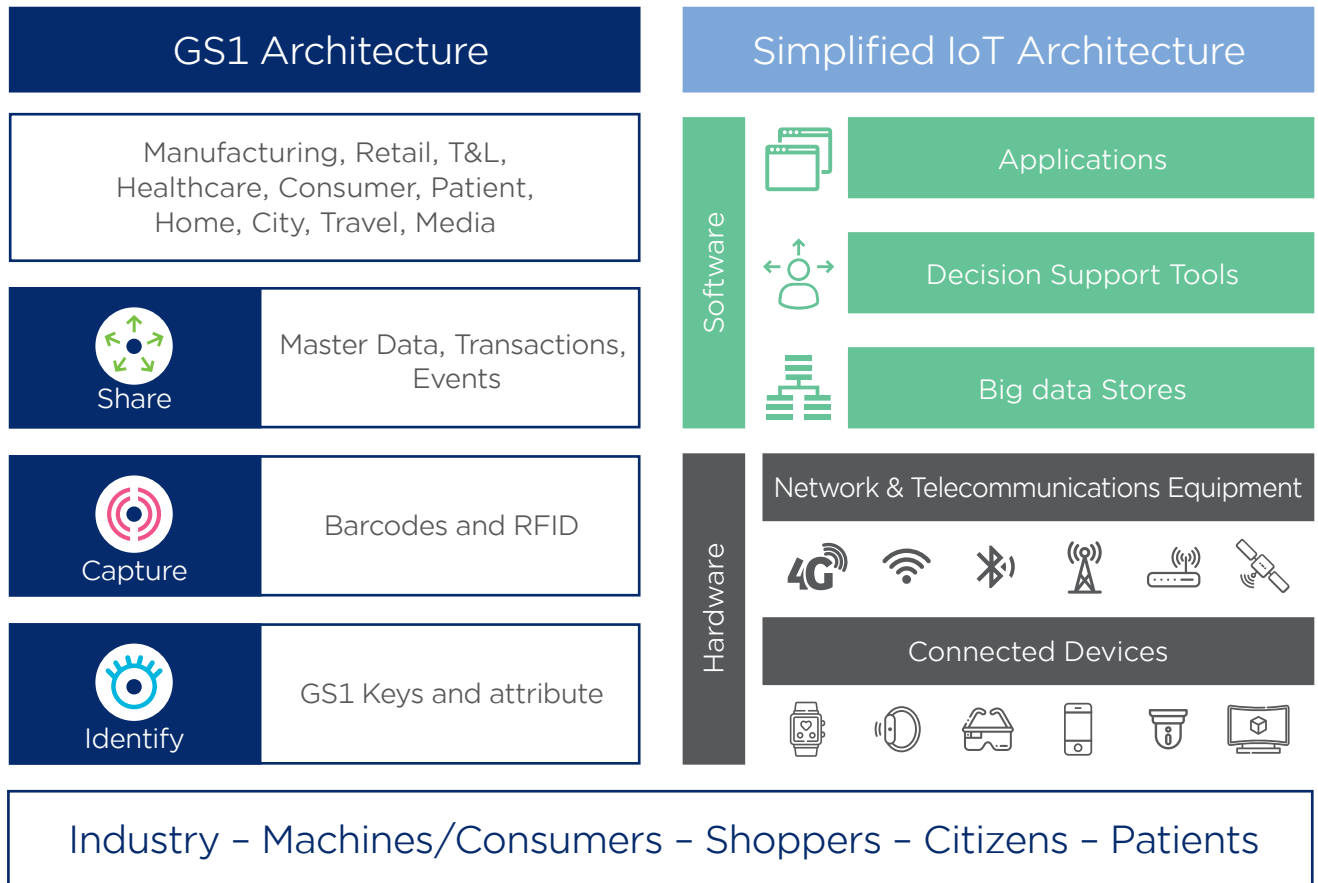
An open standard used to track movement and status of objects as they move through the supply chain, helping to answer the ‘what, where, when and why’ questions around a product’s journey.

# GS1 STANDARDS AND SERVICES FOSTER IOT DEVELOPMENT

- 1 STANDARDS   2 SOLUTIONS   3 CONSULTANCY   4 TRAINING & EDUCATION

1

## GS1 STANDARDS - A KEY ENABLER OF IOT



2

## SOLUTIONS

### GS1 HK's IoT solutions powered by EPCIS-based IoT platform ezTRACK™:

#### 1) REAL Visibility

Using patented anti-forgery micro printing technology, it empowers consumers with instant product authentication and traceability while enabling brand owners with real-time visibility on scan activities.

#### 3) Smart Traceability

Built on EPCIS, it helps businesses to address the demand for end-to-end traceability, and build trust among supply chain stakeholders, from upstream suppliers to end consumers.

#### 2) Smart Kiosk

Integrated with the latest IoT (RFID & video analytics) and AI (data analytics and predictive analysis) technologies, it captures and understands consumer buying behavior and creates a more personalised experience for consumers to promote sales.

#### 4) Cold Chain Sensor Network




A solution that provides simplified, precise, standardised and cost-effective temperature monitoring on a real-time basis, transforming data into powerful information and insights.

# 3

## CONSULTANCY

Leveraging the globally-recognised assessment tools, our certified supply chain professionals offer consultancy services to help companies to utilise best practices and robust RFID / IoT technologies and solutions into their supply chain, using GS1 standards.



Our Services	Supply Chain Stakeholders		
	Manufacturer 	Logistics Providers 	Consumer 
Supply Chain Visibility	●	●	●
ERP Process Consultancy	●	●	
RFID Item Level Tagging	●	●	
RFID Asset Management	●	●	
PMS Process Consultancy	●		
WMS Process Consultancy		●	
TMS Process Consultancy		●	
ASN Implementation		●	

**Case:** Swire Coca Cola



# 4

## TRAINING & EDUCATION

**GS1 HK offers elementary to advanced workshop for the needs of different individuals / companies:**



### IoT / EPC / RFID Training

- Grasp the principles of IoT / RFID while study application and implementation of the technologies in specific industry / environment (both standard and customised courses)

### Supply Chain 4.0 Certification Course

- Understand how the adoption of standards and technologies can help achieve supply chain automation and digitalisation.

### Smart Retail Supply Chain and Big Data Analytics

- A CPFA (Certified Professionals for Apache projects) Certified Citizen Data Scientist course that bridges data and business objectives to create real value through analytics.

**Case:** Mainetti

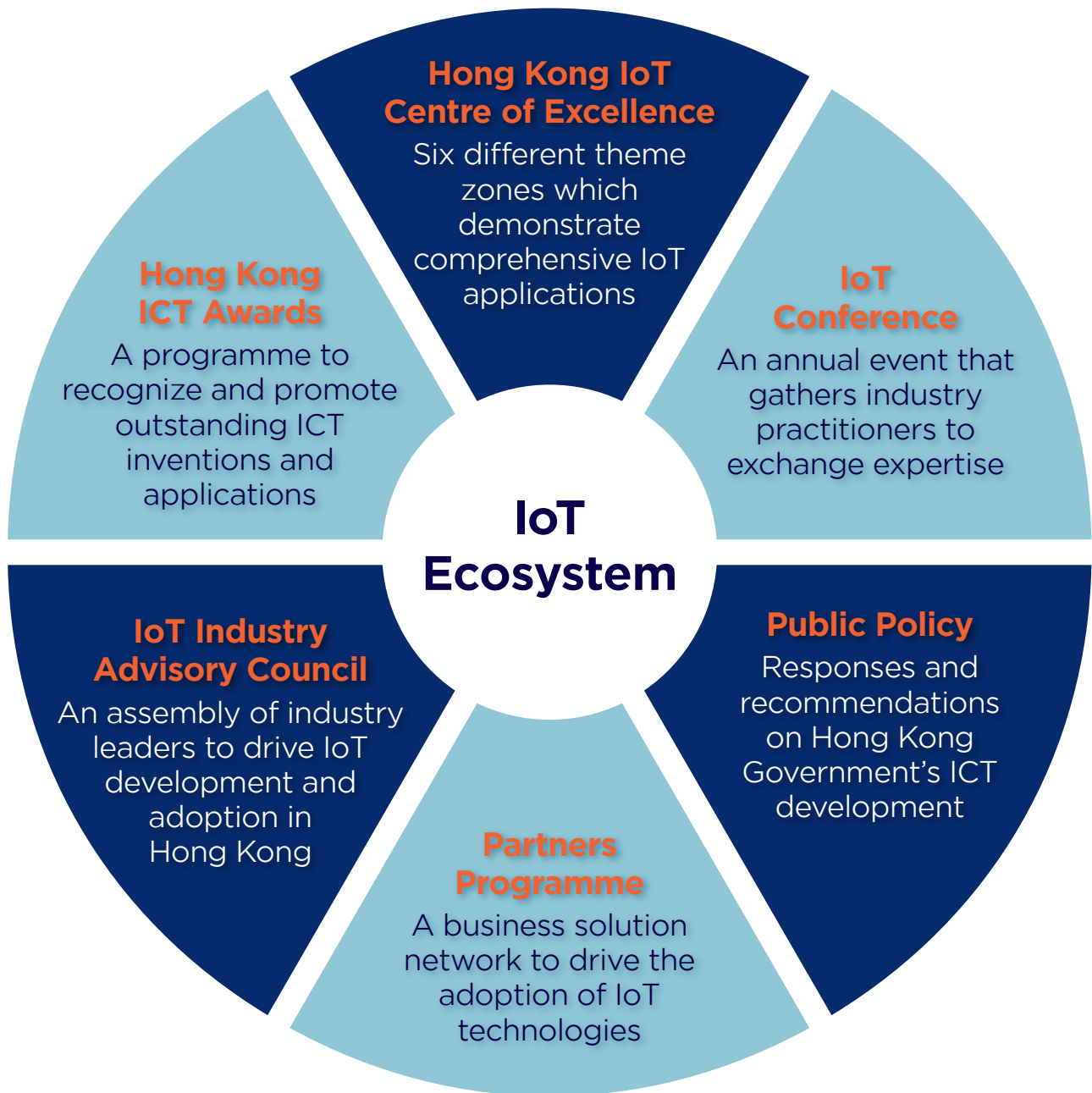


C&A



# OUR VISION:

## CONSTRUCTING A COLLABORATIVE ECOSYSTEM



Unleash the full power of IoT in your business with GS1 standards!

To get started, contact us: [services@gs1hk.org](mailto:services@gs1hk.org)

### GS1 Hong Kong

22/F, OTB Building, 160 Gloucester Road, Wanchai, Hong Kong

T +852 2863 9730

E [info@gs1hk.org](mailto:info@gs1hk.org)

[www.gs1hk.org](http://www.gs1hk.org)

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