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助推物联 享受生活

RFID Solution :

Boosting China's Retail Transformation and Upgrading

RFID技术助推中国零售转型升级

Tony TANG, CEO of Invengo

远望谷总裁 汤 军

Shenzhen, China, 2017.10.25

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1 New Retail in China
中国零售发展现状

2 IOT, RFID and New Retail
RFID物联网与新零售

3 RFID Boost China New Retail
RFID助推中国零售转型升级

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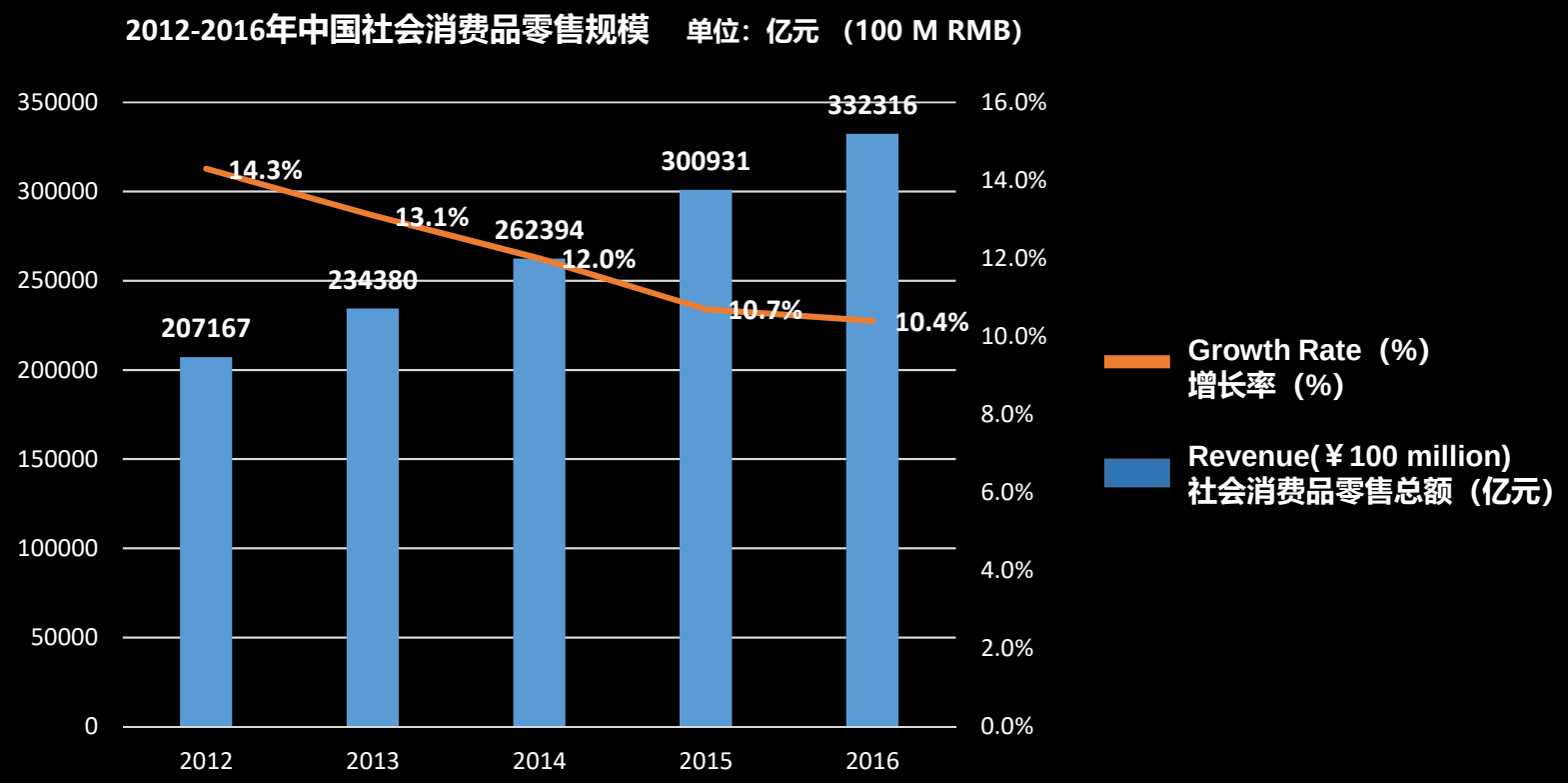
Retail in China （1） ： World‘s Second Largest Consumer Market
中国零售现状：全球第二大消费市场，总量33.2万亿元（RMB 33.2 Trillion）

Retail scale of consumer goods in China 2012-2016



- Total retail sales of consumer goods： RMB 33.2 trillion, in 2016
- Growth rate is 10.4% in 2016
- 2016年社会消费品零售总额达到33.2万亿元，增速10.4%

Source: CCFA Annual Report 2016

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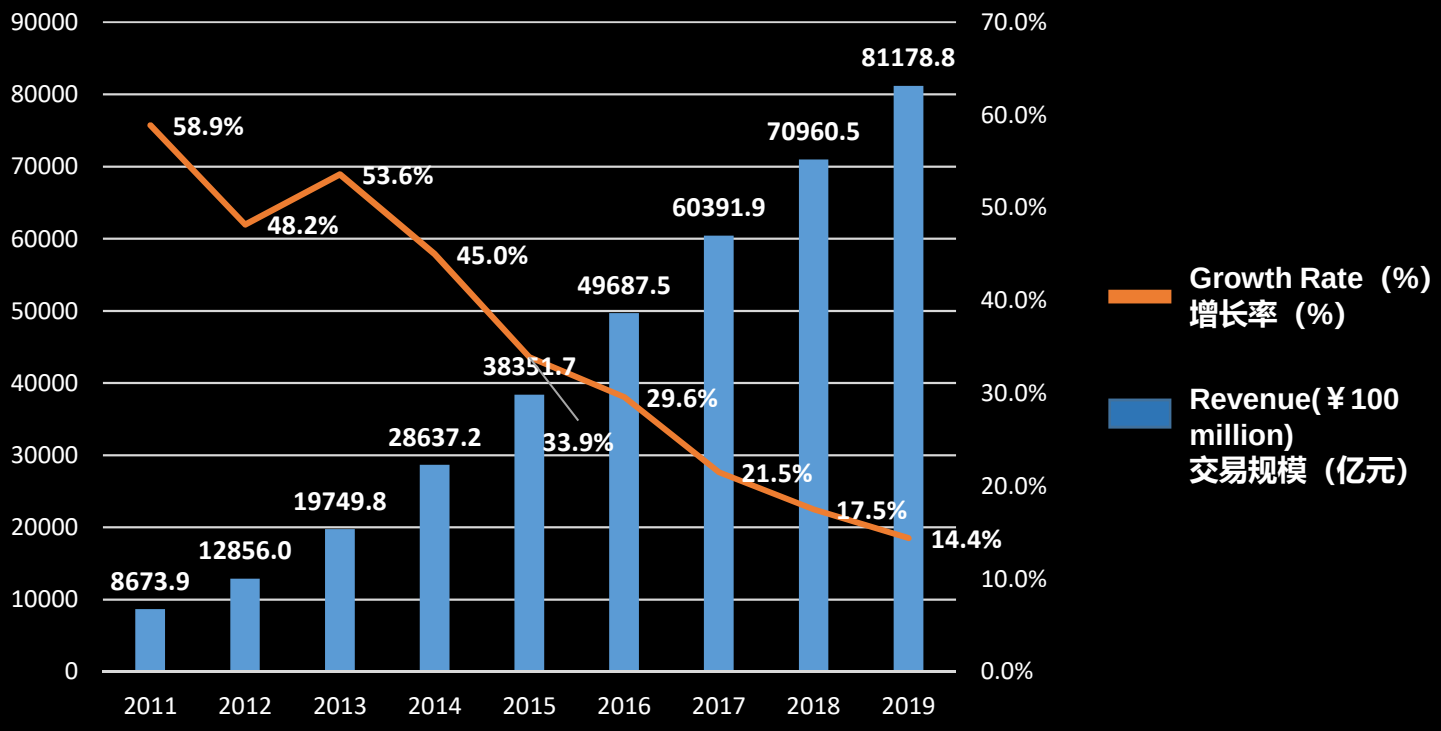
Retail in China（2） ： Offline Retail Dominate Market；Retail Growth Slows

实体店仍占主体， 线上线下零售增速放缓

China's online retail market forecast 2017-2019 2017-2019年中国网上零售市场规模预测



- Total offline retail revenue : **85%**; Online retail : **15%** in 2016
- Both online ＆ offline growth slow down； **Time to transform.**
- 2016年实体零售占85%， 线上零售占15%
- 线上线下增速放缓，转型是必由之路

Source: CCFA Annual Report 2016

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Challenges for China's Current Retail Industry
中国零售发展遇到的挑战

Consumption Upgrading

- Diversity, personalizaton
  多样化、个性化
- Experience, quality centric
  重体验、重品质
- Social Networking
  社交体验

High Cost

- Demographic dividend fading
  人口红利消失
- High Logistics cost
  物流成本高企
- Rising rental
  门店租金上涨

Business Mode

- Omni-channel split
  全渠道经营缺失
- Traditional decision-making
  传统的决策机制
- Homogenization
  经营同质化

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New Retail Debut : Three Driving Forces
新零售应运而生：三大驱动力

- Mobile Internet
  移动互联网
- IOT, Big Data, Cloud Computing, AI
  物联网、大数据、云计算、人工智能
- Block Chain & E-money
  区块链与电子货币

Consumer
消费者

- High digitization
  消费者数字化程度高
- Shopping by Omni-channel
  购物路径全渠道
- New consumption value
  新型消费观念形成

Technology
技术

Industry
产业

- Digital transformation
  零售行业数字化变革
- Multiple retail forms/species
  多元零售业态涌现
- Omni-channel business mode
  全渠道经营模式转变
- Industry cross-over
  跨界融合到来

New Retail Debut !

新零售应运而生!

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Evolution of Retail : Commerce From V1.0 to V4.0
零售的演变：商业从1.0到4.0

Commerce 4.0 : a perfect combination of online, offline, logistics, data and technology **商业4.0阶段是线上、线下、物流、数据、技术完美结合的时代**

- Goods → Consumer Experience
  商品 → 用户体验
- Sales → Data
  销售额 → 数据
- Channel → Social Network
  渠道 → 社交网络
- Enterprise → Industry Ecosystem
  企业 → 产业生态

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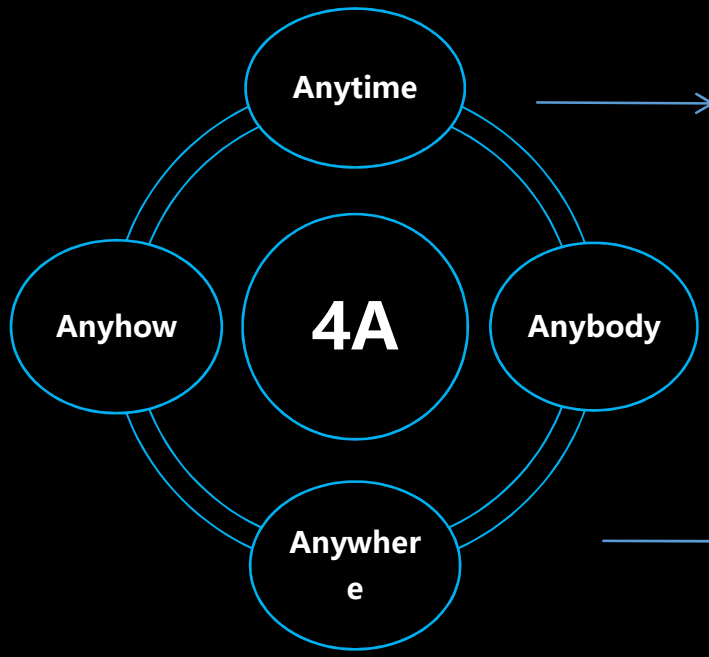
Nature of New Retail
新零售的本质

New retail：Digitization, Intelligentization based on consumer-centric and UE-centric.

新零售就是以终为始，实现以用户体验为中心的数据化、智能化升级



Consumer Data Intelligentization

用户数据智能化

Product Data Intelligentization

产品数据智能化

Supply Chain Data Intelligentization

供应链数据智能化

Cost

成本！

Efficiency

效率！

Experience

体验！

Boundaryless Shopping Experience

无边界购物体验

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New Retail Development : From Digitization to Intelligentization
新零售发展路径：数字化 ⟶ 智能化

Informatization
信息化

Online
在线化

Cloud
云端化

Intelligentization
智能化

- Optimize Supply Chain to avoid the diseconomy of scale
  供应链整合优化，规避“规模不经济”拐点
- Make the whole data process visualized and smart
  实现数据全程可视化、智能化

- Build a new ecosystem between Retailers and Supply Chain Synergies
  构建新型的零供协同新生态
- Core technologies : IOT, Big Data, Cloud Computing
  物联网、大数据、云计算是核心技术

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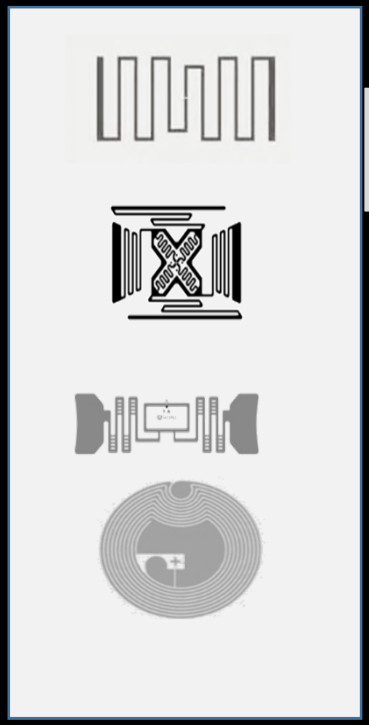
What's IOT？ Not Only Technology, but Management Philosophy
什么是物联网？不仅仅是一种技术，还是一种管理哲学

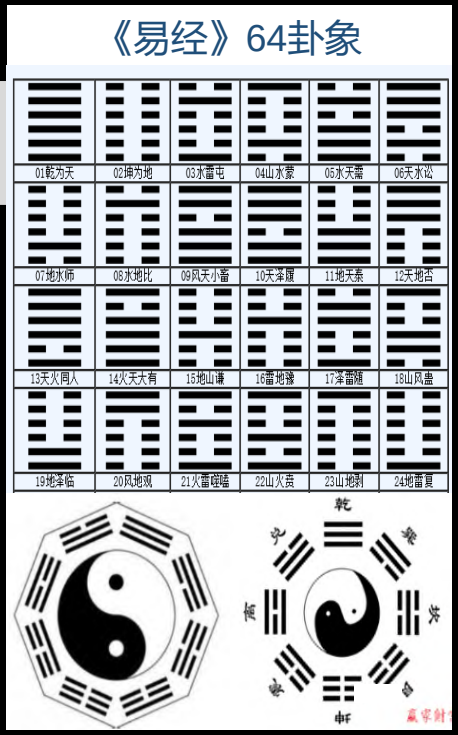
- Viewing the IOT from the Perspective of Management Philosophy
  从管理哲学角度看物联网



RFID Inlay Design

IOT (1999，US) 物联网-IOT（1999年美国）	The Book of Changes (841 BC，China) 《易经》哲学（公元前841年）
Sense the world 感知世界	Union of Heaven and Human 天人合一
Objects Related 物物相息	Taoist Tai Chi 物物一太极
All things interconnected 万物互联	Unity of Yin and Yang 阴阳合一
Cosmic Synergy 宇宙协同	Heaven, Earth and Humanity 天道 地道 人道

《易经》64卦象



Design Pattern
设计形态
Management Philosophy
管理哲学

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What's IOT？ Three Layers of IOT
什么是物联网？物联网的三层架构

Application Layer

应用层

Smart Retail

Smart Library

Smart Transportation

Intelligent Manufacturing

Network Layer

网络层

Wi-Fi

Ethernet

Zigbee / 6LoWPAN

Bluetooth

Cellular network

Sense Layer

感知层

RFID, the core technology to capture object information

RFID是获取物体信息的核心技术

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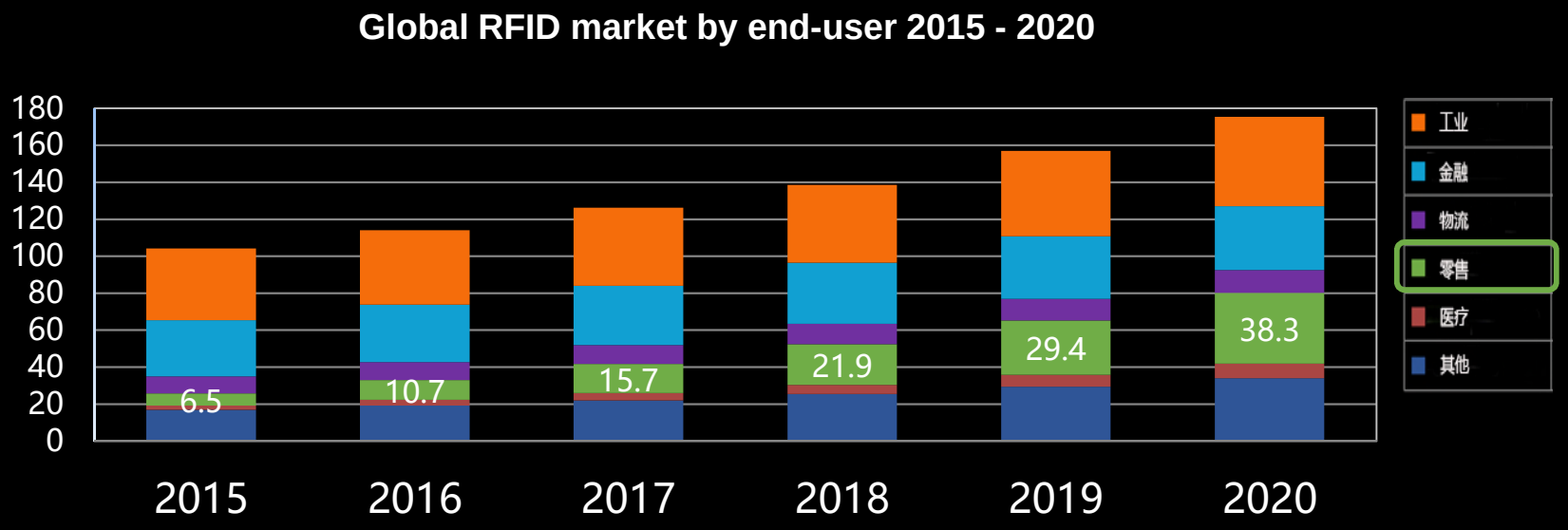
RFID in Retail Application : CAGR Close to 40%
RFID在零售业应用：年复合增长率40%



- Retail industry become the fastest growing industry in terms of RFID application
  零售业（特别是**服饰**领域）将成为增速最快的行业
- Global RFID retail in 2016 is 1.07 billion US dollars, which expected to reach $3.8 billion in 2020
  全球零售RFID2016年为10.7亿美金，预期2020年将达到38亿美金
- RFID retail market expected to 21.85% by 2020
  预期2020年市场占有率达到21.85%

Source: Technavio 2016

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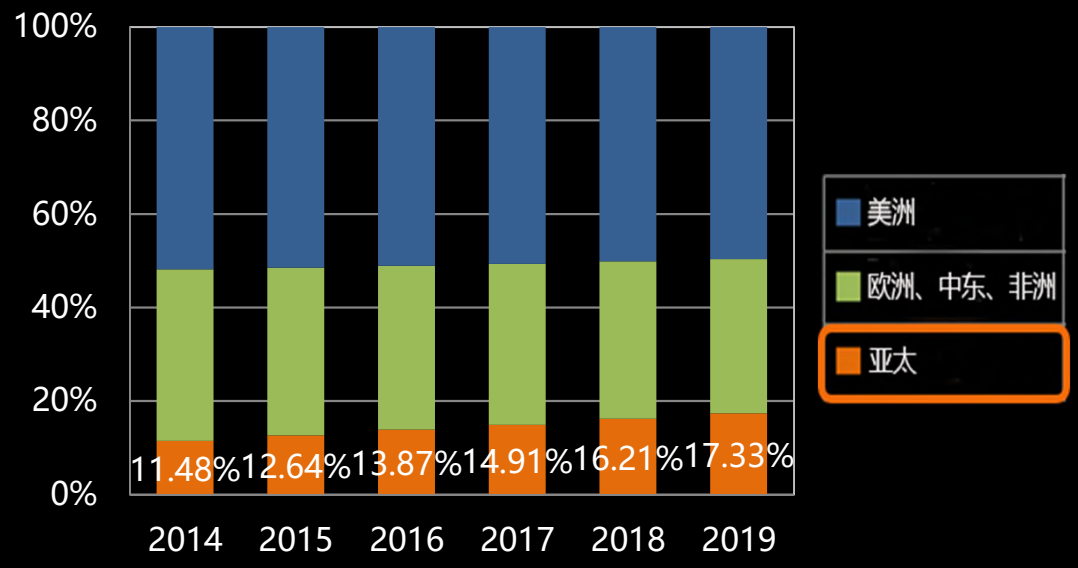
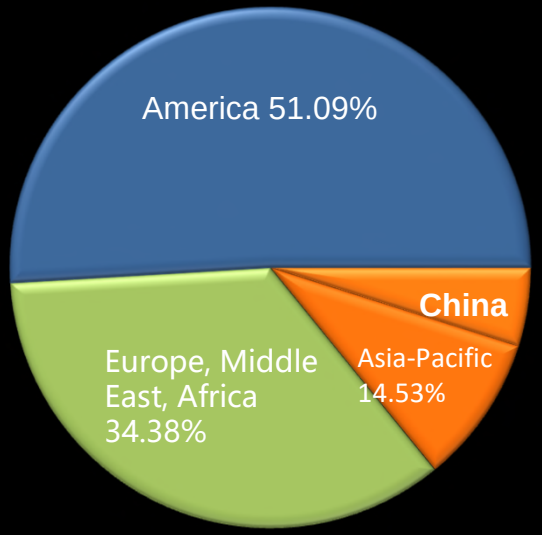
Global RFID Retail Market Segmentation： China's Retail Market Prospect
全球RFID零售市场分布： 中国零售市场前景广阔

Geographical segmentation of RFID market 2014-2019



Global segmentation of RFID market 2017



- The Americas region dominates, Asia Pacific retail market grows the fastest

  美洲地区占据主导地位，亚太地区零售市场增速最快

- As the largest economy in the Asia-Pacific region, China's market prospects!

  中国作为亚太地区最大经济体，RFID零售市场前景广阔

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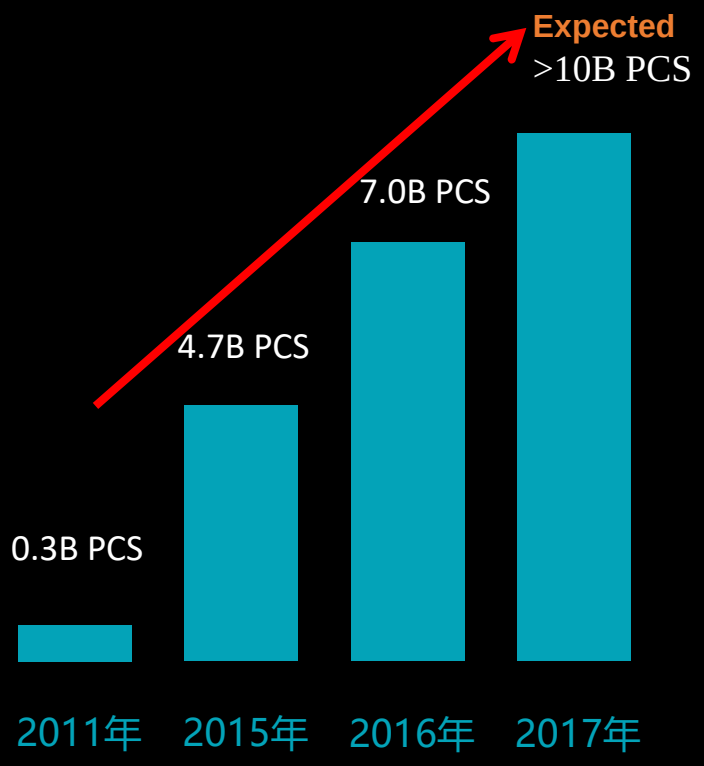
Global RFID Retail Market : RFID Application is Booming
全球RFID零售市场：RFID应用春天来临



Global RFID Tag Application QTY
全球零售业RFID电子标签应用情况

- **International brands : Zara, UNIQLO, H&M, GAP, Marks&Spencer, TESCO, Target, J.C.Penney and etc.**
  国际：ZARA，优衣库，H&M， GAP，玛莎百货，TESCO， Target，J.C.Penney 等

- **Domestic brands: HLA, La Chapelle, MJ Style, INMAN, Mark Fairwhale, FUANNA and etc.**
  国内：海澜之家、拉夏贝尔、MJ Style、茵曼、马克华菲、富安娜等

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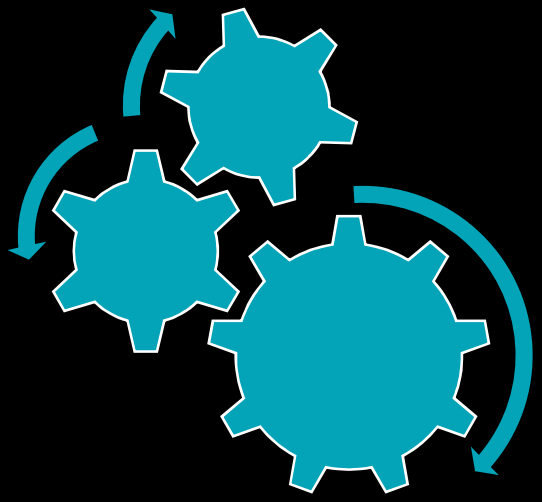
RFID Boost China Retail Transformation and Upgrading
RFID 技术助推中国零售业务转型升级



- **Smart Manufacturing**
  （智能制造）
- **Smart Logistics and Warehousing**
  （智能仓储物流）
- **Various Smart Store/New Retail Species**
  （智慧门店/零售新业态）
- **Big Data and BI Enable decision-making digitized and precise**
  （大数据与BI使决策数字化与精准化）

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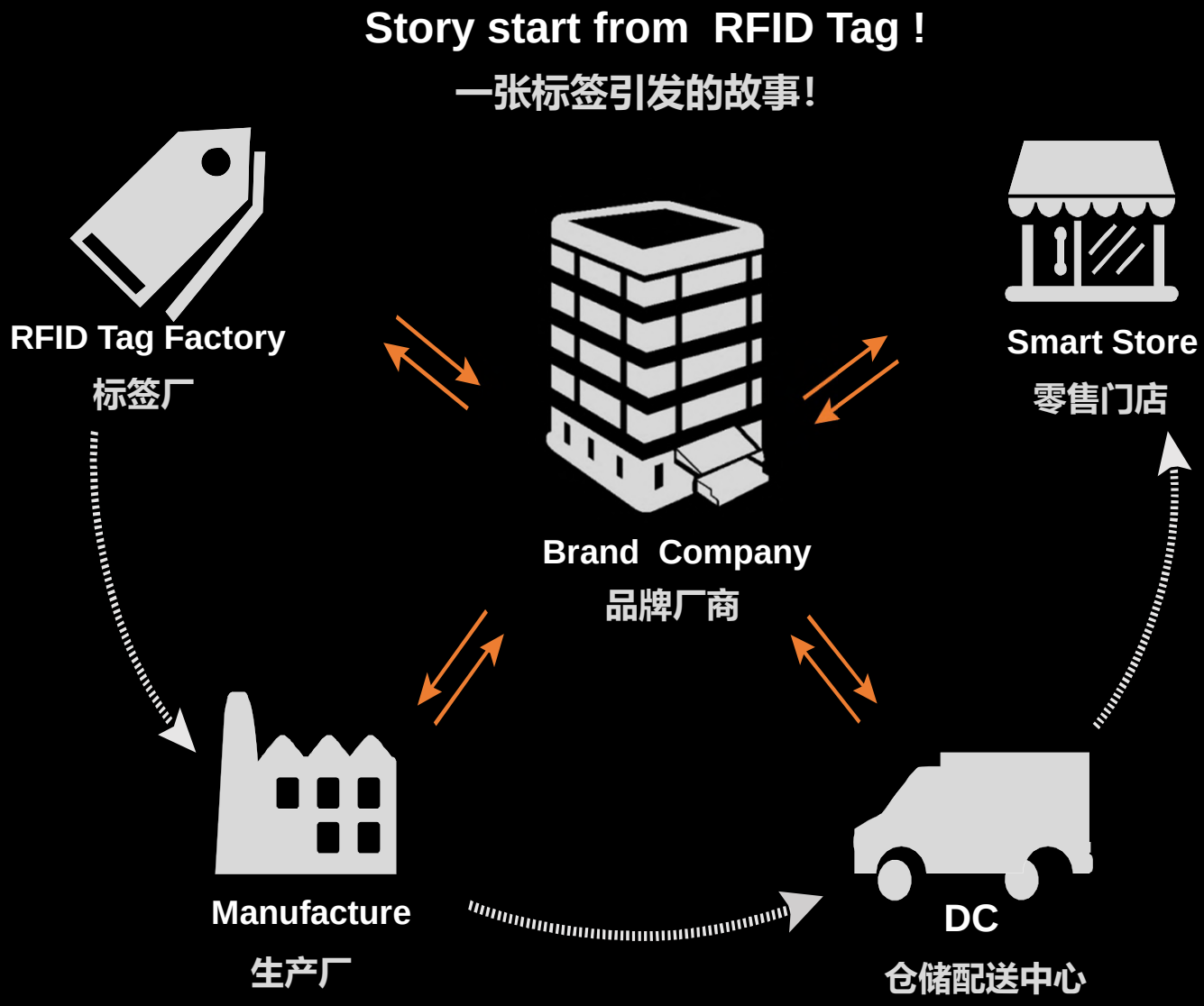
New Retail RFID Solution Landscape
解决方案全景图



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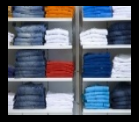
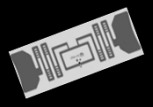
RFID Item-level Ecosystem for New Retail
新零售RFID单品级生态系统

Application Layer	 Disney	Scenario
应用层	INORETAIL@SmartStore INORETAIL@INVENTORY	Data App
Data Processing Layer	Local ONS, Remote ONS	ONS
数据处理层	Architecture for Data analysis &application	Data Infrastructure
	Classification Algorithm, Clustering Algorithm, Deep Learning	DA
DAQ Layer		RFID Equipment
数据采集层		RFID Tag

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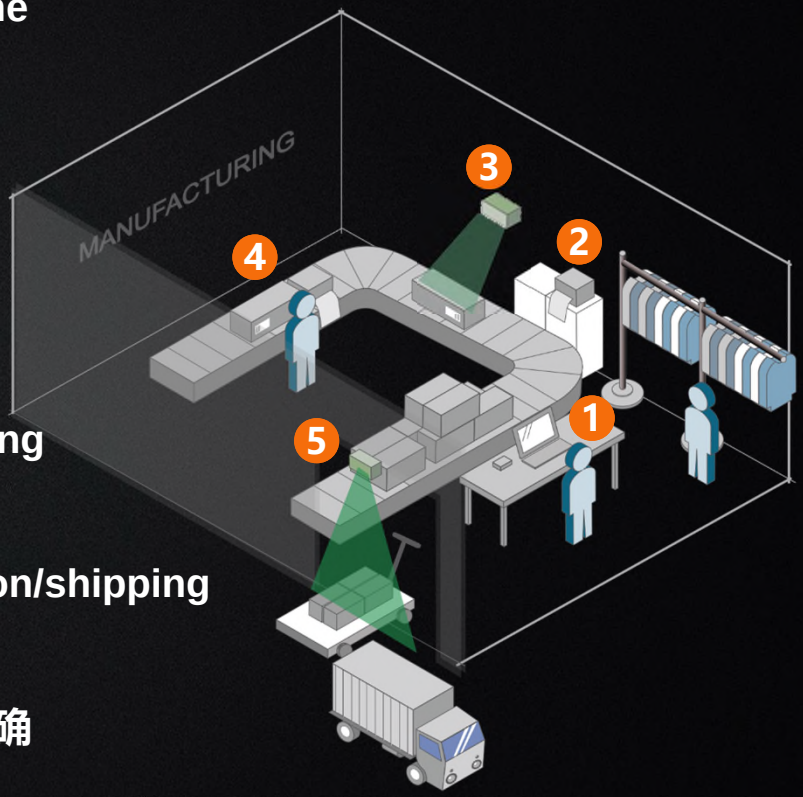
RFID Boost New Retail （1） ： Smart Manufacturing
RFID 助推新零售（1）：智能生产

1. Order online, interaction with client real time
   线上接单、定制化需求获取
2. Tag Printing, encoding and verification
   电子标签打印，数据绑定；标签校验
3. Real time monitoring whole process
   生产过程实时监控
4. Automatic sorting and flexible manufacturing
   基于RFID实现自动分拣、柔性化生产
5. Fast and Accurate item scanning/verification/shipping / BI reporting
   产品扫描 / 复核 / 发货 / 生成报表，快速、准确



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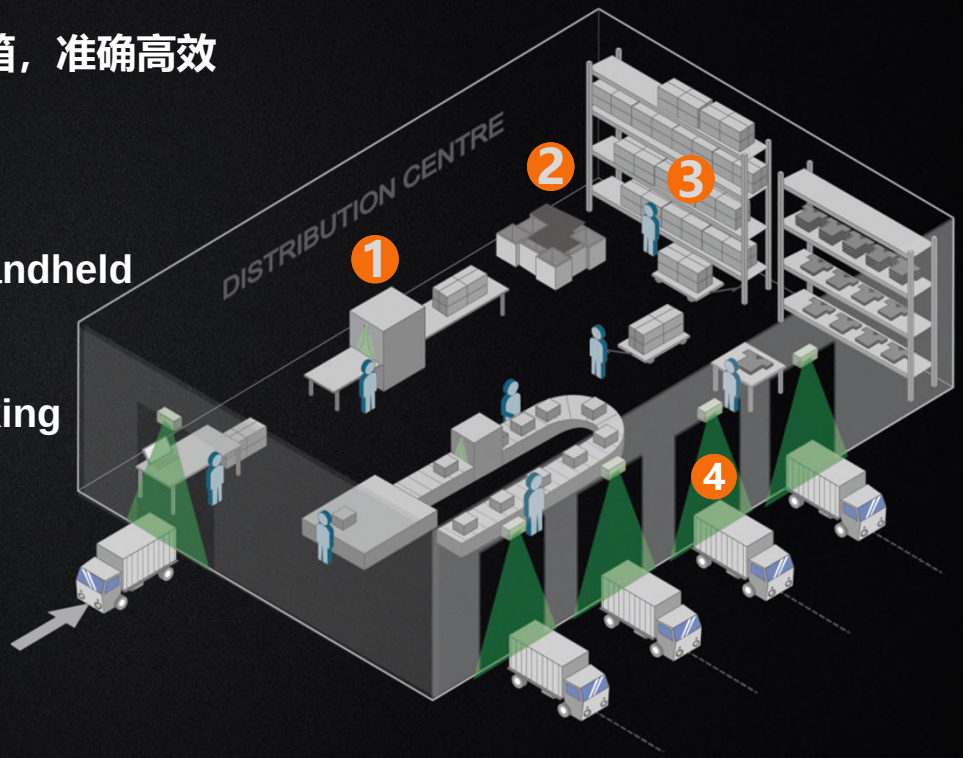
RFID Boost New Retail （2） ： Smart Logistics and Warehousing
RFID 助推新零售（2）：智能仓储

1. Tunnel inbound verification one box per 6 sec.
   无需开箱，隧道机整箱批量盘点，6秒每箱，准确高效
2. Inbound items & returns sorting
   散货/退货，智能、快速分拣
3. High efficiency cycle counting with Handheld
   手持机快速、批量盘点、高效精准
4. Transparent logistics， real-time tracking precise positioning
   透明物流，实时追踪、全球定位



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RFID Boost New Retail（3）： Various Smart Store/New Retail Species
RFID助推新零售：多元化智慧门店与零售新物种

1. **Smart Store**
   智慧门店
2. **Unattended Store**
   少人、无人智慧门店
3. **Unattended Shelf**
   无人货架

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Smart Store Digital Solution：Experience Consumption
智慧门店数字化解决方案：消费体验环节

☐ Smart Rack
智能衣架

◆ Auto-sensing consumer preference

自动感知消费偏好

◆ Accurate behavior data

精准进销存数据支撑

☐ Smart Fitting Room
智能试衣间

◆ Automatic fitting data capture

试衣数据自动采集

◆ Customer request in second

顾客需求一键送达

◆ Collocation Recommendation

推荐服装搭配，提升销售连带率

☐ Smart Checkout
智能收银

◆Batch reading

批量读取

◆Checking out without waiting

支付零等待

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Smart Store Solution : Commodity Management
智慧门店数字化解决方案：商品管理环节

- Fast Receiving
  &
  Inventory:
  收发货盘点:
  Read 200 pcs in
  10 seconds

- Fast Locating：
  快速找货：
  Locate any in-store
  item in 60 seconds

- Smart Cycle Counting:
  闲时盘点：
  Data collected by robot
  Automatic Counting

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Smart Store Solution : Commodity Tracking
智慧门店数字化解决方案： 商品追踪环节

- **Anti-counterfeit & Anti-channel conflict**
  防伪防窜：

- ◆ Exclusive ID to prevent fake
- ◆ Tag bounding depending on region or store

- **Anti-shoplifting:**
  智能防盗：

- ◆ Accurate alarm recognition when sensing active tag

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   无人货架

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Unattended Convenience Store : 24 Hours, Unattended
无人便利店 : 24h 无人值守

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Unattended Clothes Store : Experience Consumption
无人服装门店：极致消费体验

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Unattended Shop in Shop : Global Commodity, Easy-buying
少人精品店：海淘精品一站式购齐

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RFID Boost New Retail（3）： Various Smart Store/New Retail Species
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Unattended Shelf : Smart Shelf, Shopping Platform-sharing
无人货架：智能无人共享货架平台

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RFID Boost New Retail （4）：
Big Data & BI Enable Descison-making Digitized and Precise
RFID 助推新零售（4）：大数据赋能决策数字化与精准化

Data Standardizing- > Data Enabling- > Data Serving- > Data Commercializing

数据应用四步曲：数据标准化—数据能力化—数据服务化—数据业务化

- Consumer Data
- Commodity Data
- Supply Chain Data

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Competition of New Retail Come Down to Supply Chain Management
新零售的竞争：核心是供应链的竞争

Data
数据

Technology
技术

Consumer
消费者

Supply Chain
供应链

New Supply Chain ：Supply Chain + Marketing + Big Data
新零售时代和业态中的新型供应链：供应链 + 营销 + 大数据

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