

# HKPC 行業專題培訓講座

## 雲計算 ~ 在零售業 (III) 30/4

講題： 雲計算及物聯網  
~在零售業發展方向

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# 雲計算 · 在零售業

共分三部分/堂 (3 Sessions)

(I) 雲計算基礎篇：What, When, Why, How..

(II) 雲計算實踐篇：O2O, 零售業何去何從

(III) 雲計算產業鏈篇 (Cloud & IoT)

# 雲計算 · 在零售業 (III) – 產業鏈篇Agenda

## 6. 什麼是物聯網?

6.1 物聯網定義。

6.2 物聯網形成。

6.3 物聯網的崛起趨勢。

## 7. 雲計算移動互聯網結合IoT

7.1 雲計算與移動互聯網結合的產業鏈。

7.2 雲計算與移動互聯網生態及五個結合優勢。

7.3 雲計算結合物聯網:發展趨勢,物聯網技術架構。

7.4 雲計算與物聯網的三種結合方式。

# 雲計算・在零售業 (III) – 產業鏈篇Agenda

## 8. 雲計算/物聯網在零售業的發展

8.1 物聯網對零售業的衝擊。

8.2 物聯網應用案例分享。

8.3 總結





## 第 II 堂： 雲計算實踐篇回顧

# 如何選擇合適雲計算方案：

- 雲計算應用的六個評估範疇
- 雲計算的主要風險和憂慮
- 雲存儲應用全面分析
- 雲計算及O2O在零售行業上的發展

### 3. 雲計算應用的六個評估範疇

1. 投資成本

2. 申請方法

3. 客戶支援

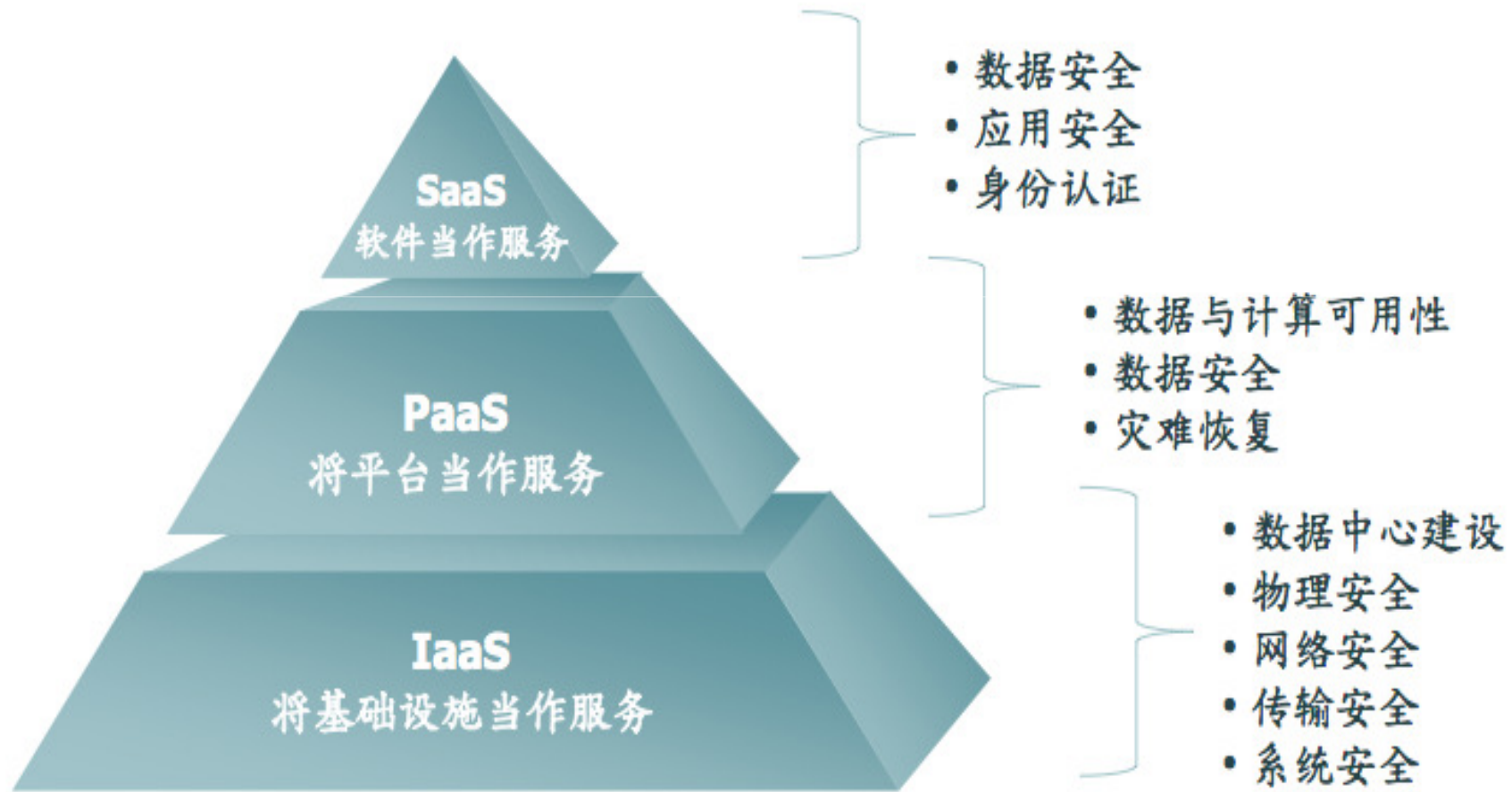
4. 用戶體驗

5. 數據安全

6. 系統功能

## 4. 雲計算風險與治理技術

### 雲計算架構的安全問題：



# 雲計算(Mobile-Cloud)的主要安全問題:

- 惡意使用 (DDoS, Stealth, Spam..)
  - 未知風險預測 (Heartland支付系統)
  - 惡意業內人士 (Malicious insider)
  - 賬戶服務或流量劫持 (DNS/Account stolen)
  - 網絡釣魚/木馬程式
  - 共享技術潛在風險
  - 不安全的API
  - 數據丟失/數據洩漏
- 繼承了源自PC上使用互聯網風險，很多Mobile App軟件沒有考慮周詳信息安全的設計
- 移動雲計算太方便
- 一般使用者沒有控制數據使用
- 使用者輕心，去下載並安裝不知名軟件
- 用了不知名搜索引擎和檔案下載組點：點對點，惡意軟件病毒蠕蟲間諜軟件
- 惡意軟件：病毒，蠕蟲，間諜軟件.. (jailbreak, rootkit, etc)

Source: 中国联通研究院 张云勇 陈清金 潘松柏 魏进武 Nov2010

# 5.1 什麼是O2O?跟零售行業有什麼關係

- 而最近流行的O2O，更是在 智慧型手機上網+社交網路+手機支付 ~O2O 火燙燙的來臨。
- O2O 就是將虛擬網路上的購買或行銷活動帶到實體店面中。

O2O產業鏈雛形已完整的呈現在公眾視野，“入口+服務+支付”為O2O的主要框架。

什麼零售業產品最適合用O2O？

- 衣服/鞋/用品
- 醫藥/食品/餐飲
- 電影娛樂/服務



BAT的O2O布局			
	入口	服务	支付
阿里	手机淘宝、支付宝钱包、UC、神马、高德	美图、丁丁、快的、淘点点、银泰百货	支付宝钱包
腾讯	微信、手Q、QQ浏览器、搜狗、腾讯地图（四维图新）	高朋、大众点评、滴滴、58同城、华南城	微信支付、QQ钱包
百度	百度搜索、百度地图	糯米网	百度钱包

关注微信：科技不吐不快 文/王利阳



## 第 III 堂:

# 6. 什麼是物聯網?



## 6.1 物聯網定義

**Internet of Things:** (abbr. IoT)

A proposed development of internet in which everyday objects have network connectivity, allowing them to send and receive data.

Source: Oxford Dictionary, Aug 2013

### IoT Statistics:

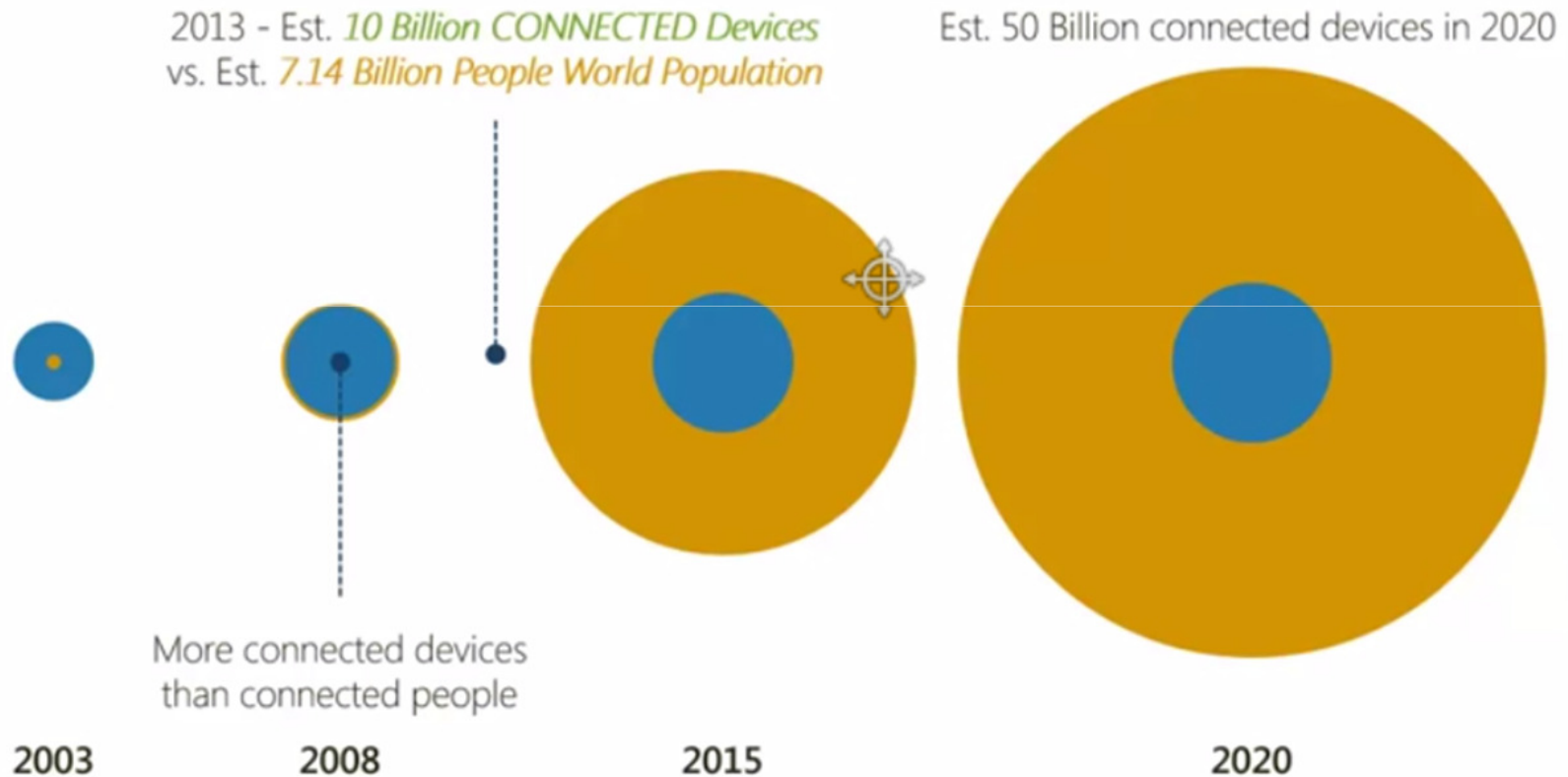


Source: CISCO 2014



## 6.1 物聯網定義

### CONNECTED "THINGS" VS PEOPLE



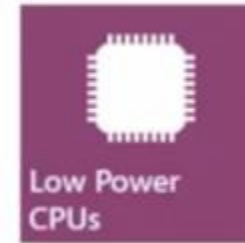
Source: CISCO InternetWorld stats 2014

## 6.2 物聯網形成

### ENABLERS FOR

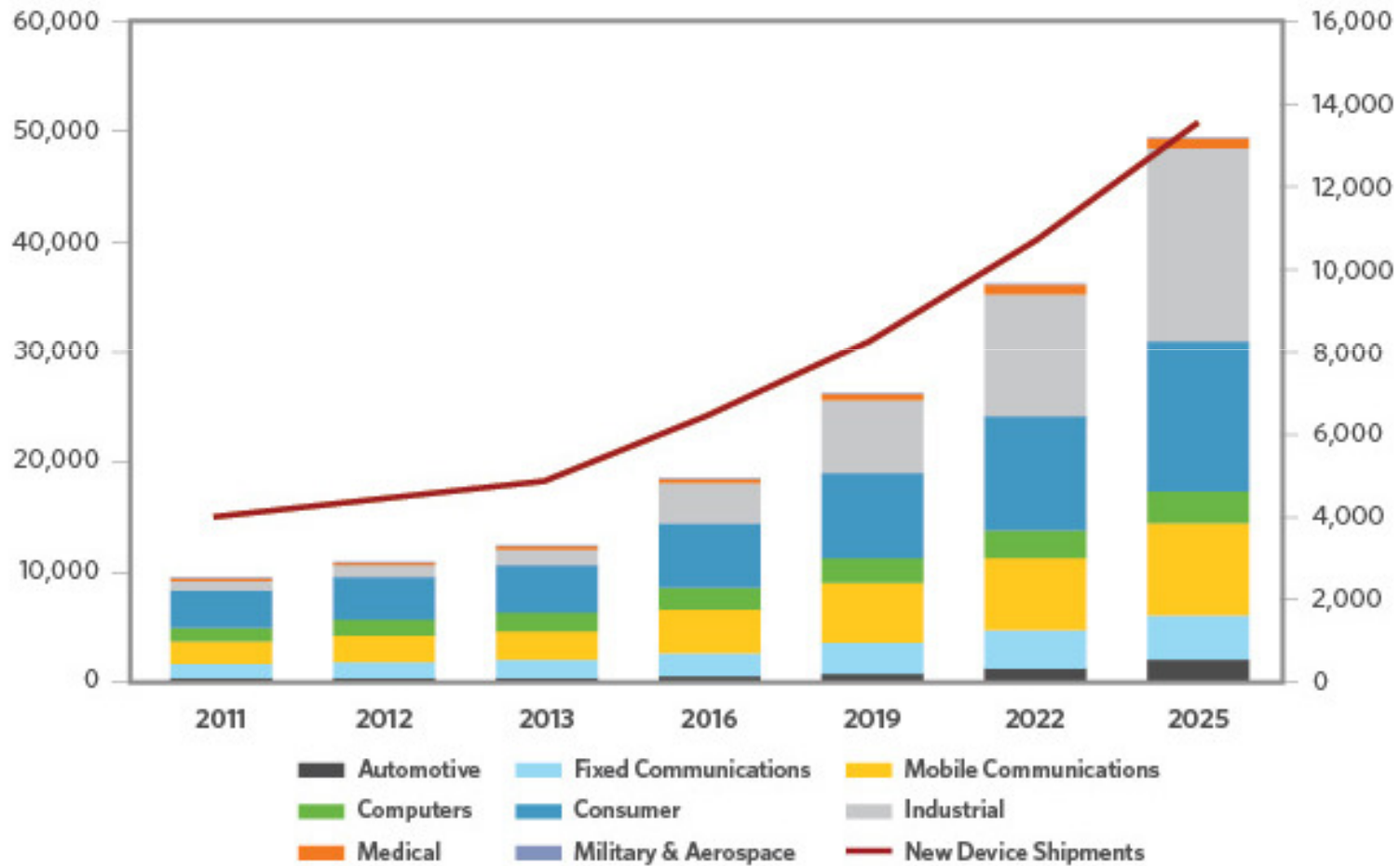


INTERNET  
OF THINGS



## 6.3 物聯網的崛起趨勢

### INTERNET OF THINGS, WORLD, 2011-2025



Source: IHS 2013

## 6.3 物聯網的崛起趨勢

# INTERNET OF EVERYTHING EVOLUTION

**Internet of Everything (IoE):** Represents the open access to data from one or more monitoring and control systems by third-party applications to provide unique, additional value to stakeholders.



Source: IHS 2013

# 6.3 物聯網的崛起趨勢



- Crop management
- Soil Analysis



- Parking
- Traffic flow
- Anti-theft
- Location Tracking



- Smart Meters
- Wearing sensing
- Manufacturing ctrl
- Climate control



- Species tracking
- Weather prediction
- Resources management



- Wearable devices
- Implanted devices
- Telehealth services



- Resource allocation
- Threat analysis
- Troop monitoring



- Product tracking
- Inventory control
- Focused marketing



- Smart home control
- Optimized energy use
- Maintenance

More IoT applications by industry are expected .. They're coming ...



## 7. 雲計算移動 互聯網結合IoT



# 7.1 雲計算與移動互聯網結合的產業鏈

移動雲計算的產業鏈結構主要由以下實體組成：

- ① 雲計算基礎設施供應商
- ② 雲計算中的應用程序/服務供應商（第一層消費者）
- ③ 雲計算中的開發者（第二層消費者）
- ④ 雲計算中的最終用戶（第三層消費者）



移動雲計算的產業鏈構成

## 7.2 雲計算與移動互聯網



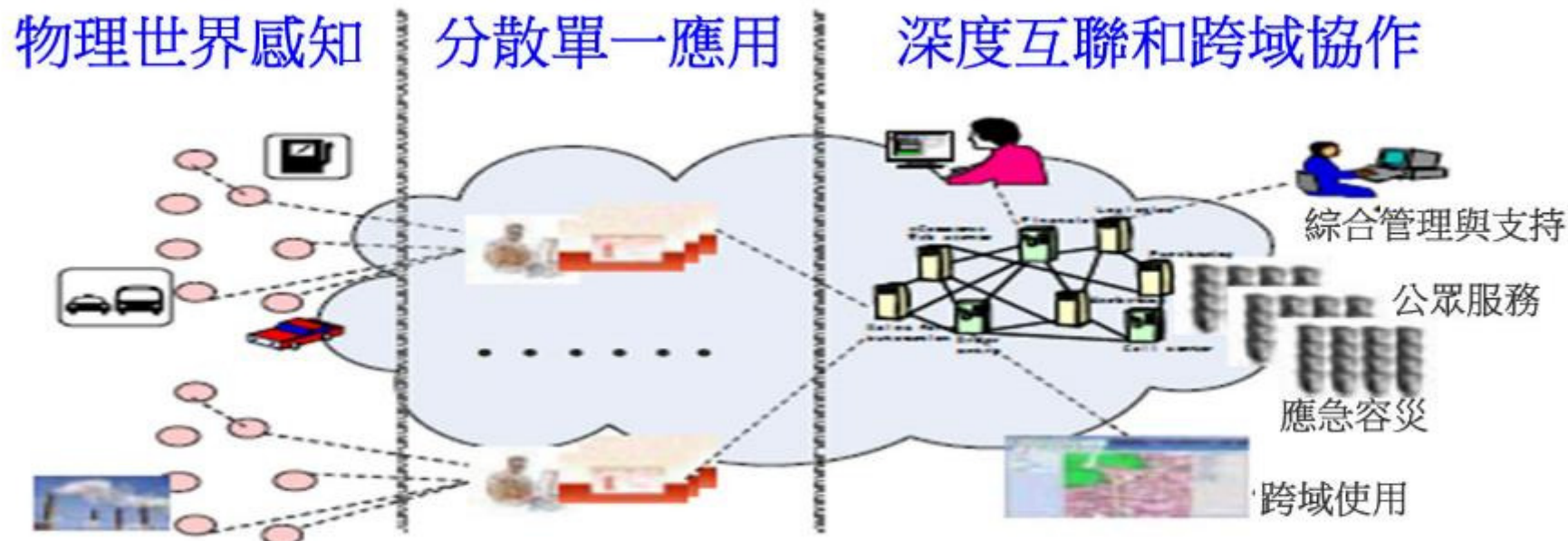
產生五個  
結合優勢





## 7.3 雲計算結合 物聯網

## 7.3.1 物聯網發展趨勢



□ 物理世界感知是物聯網建設的基礎。

□ 大量獨立建設的單一物聯網應用是物聯網建設的起點與基本元素。

□ 眾多單一物聯網應用的深度互聯和跨域協作是物聯網建設的目標。

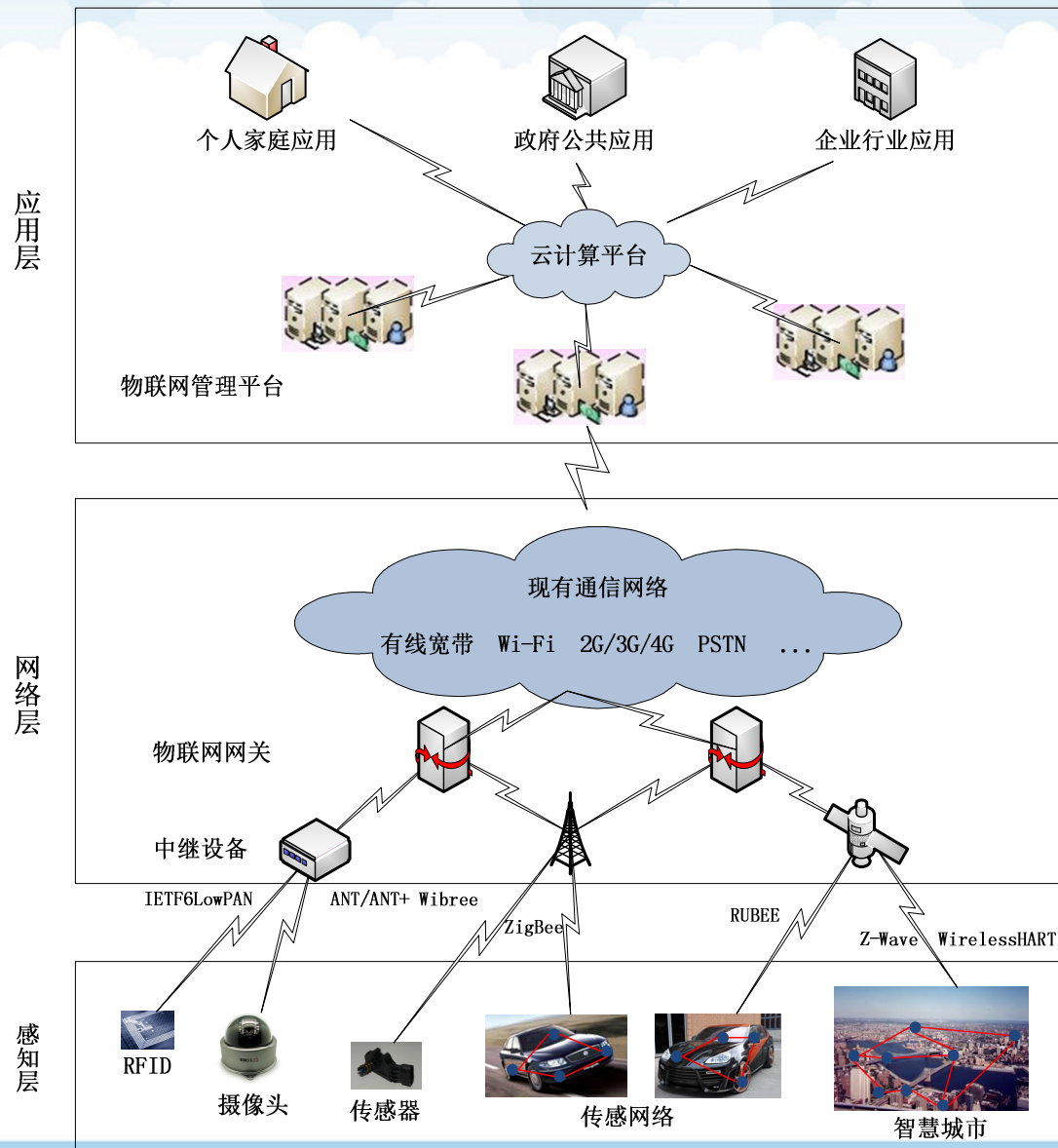
# 7.3.2 雲計算與物聯網的結合應用

物聯網的大規模發展離不開雲計算平台的支撐。

而雲計算平台的完善與大規模的應用,需要物聯網的發展為其提供最大的數據及用戶量。

網絡層-安全將為物聯網與雲計算的發展提供最可靠的保障,也是物聯網與雲計算蓬勃發展的基礎條件。

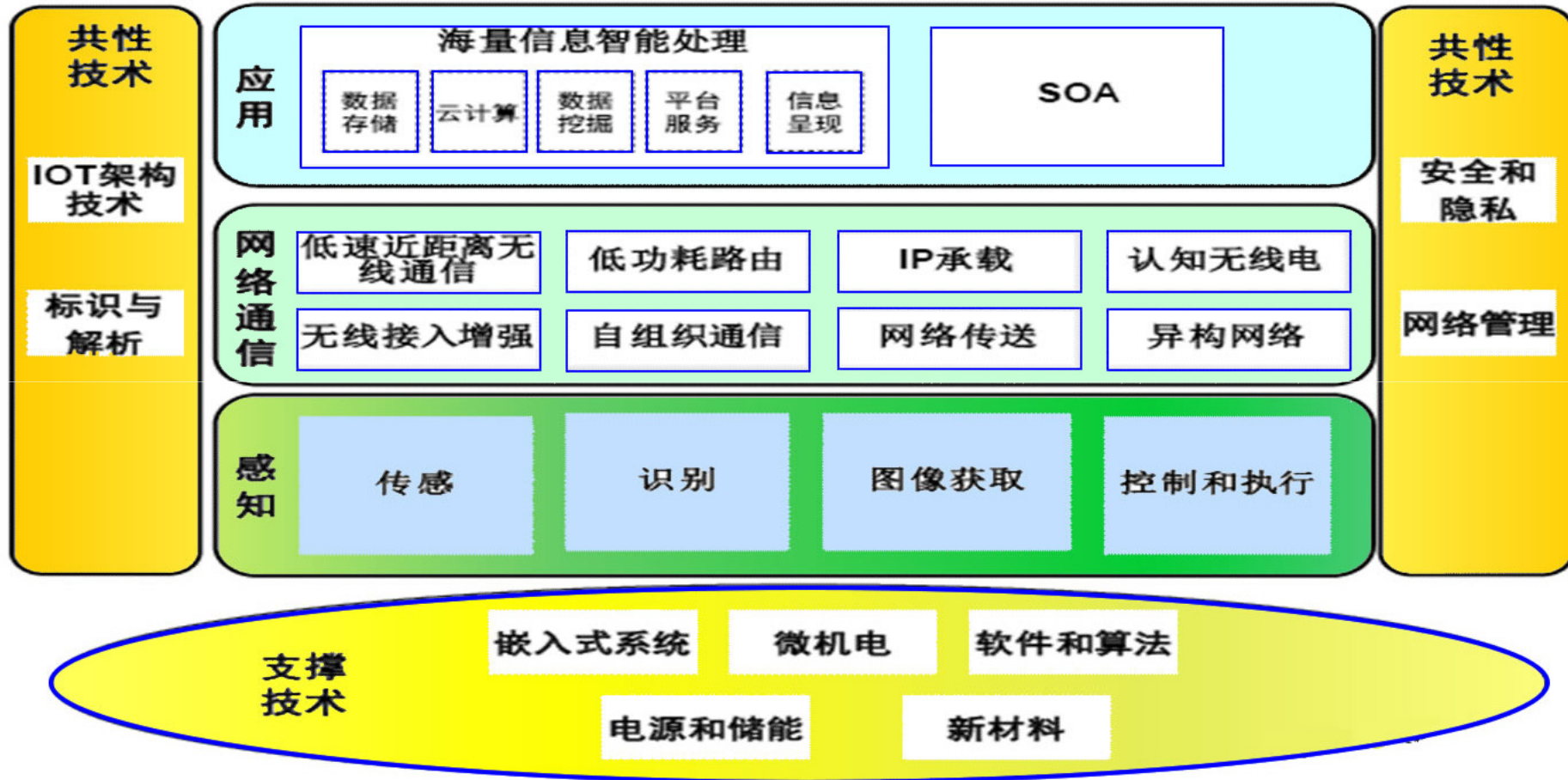
感知層將為物聯網與雲計算的發展根基



Source: 中國工業和信息化部電信研究院

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# 7.3.3 雲計算與物聯網技術架構



Source: 中國工業和信息化部電信研究院

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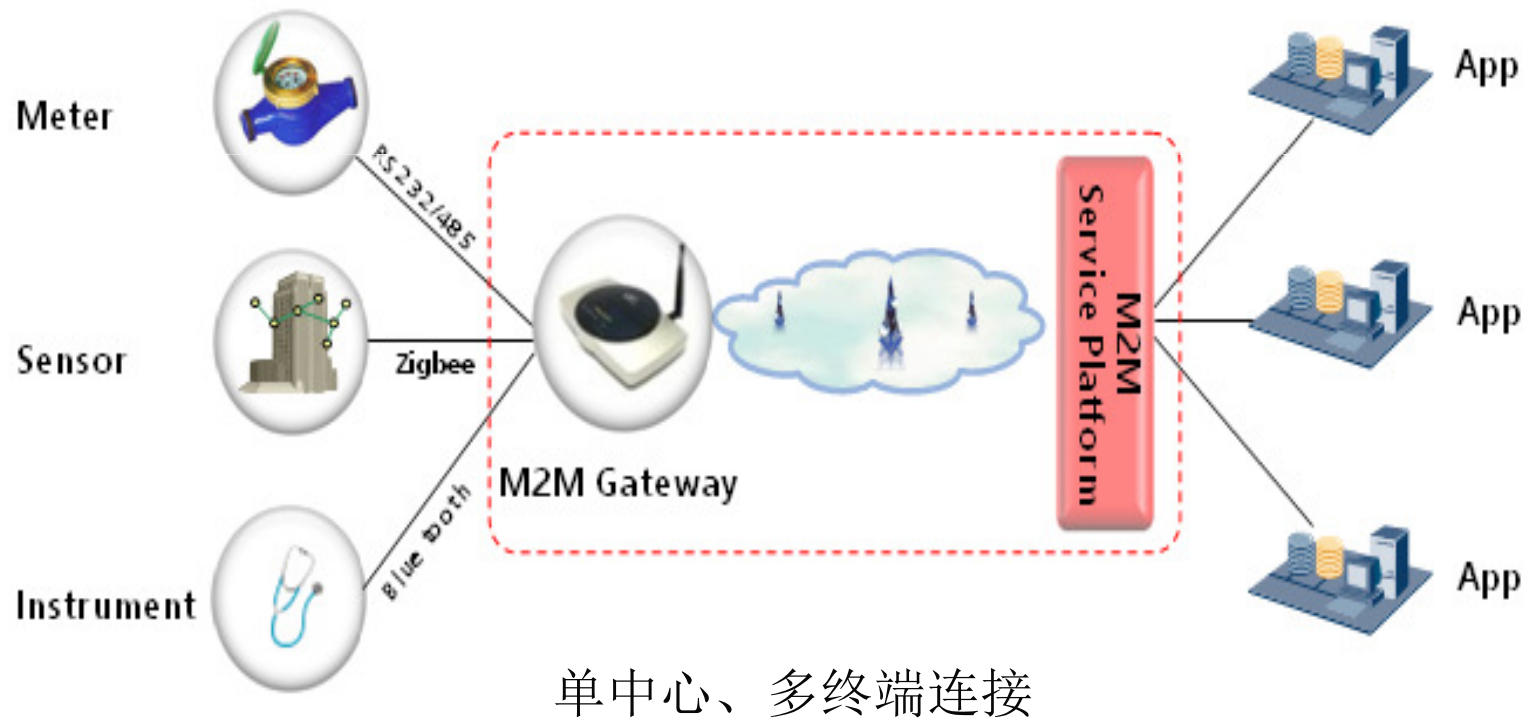
Page 24



## 7.4.1 雲計算與物聯網的結合方式

第一種：單中心，多終端

這種方式的雲中心大部分由私有雲構成，可提供統一的界面，具備海量存儲能力與分級管理功能。



# 7.4.1 雲計算與物聯網的結合方式

第二種：多中心，大量終端。

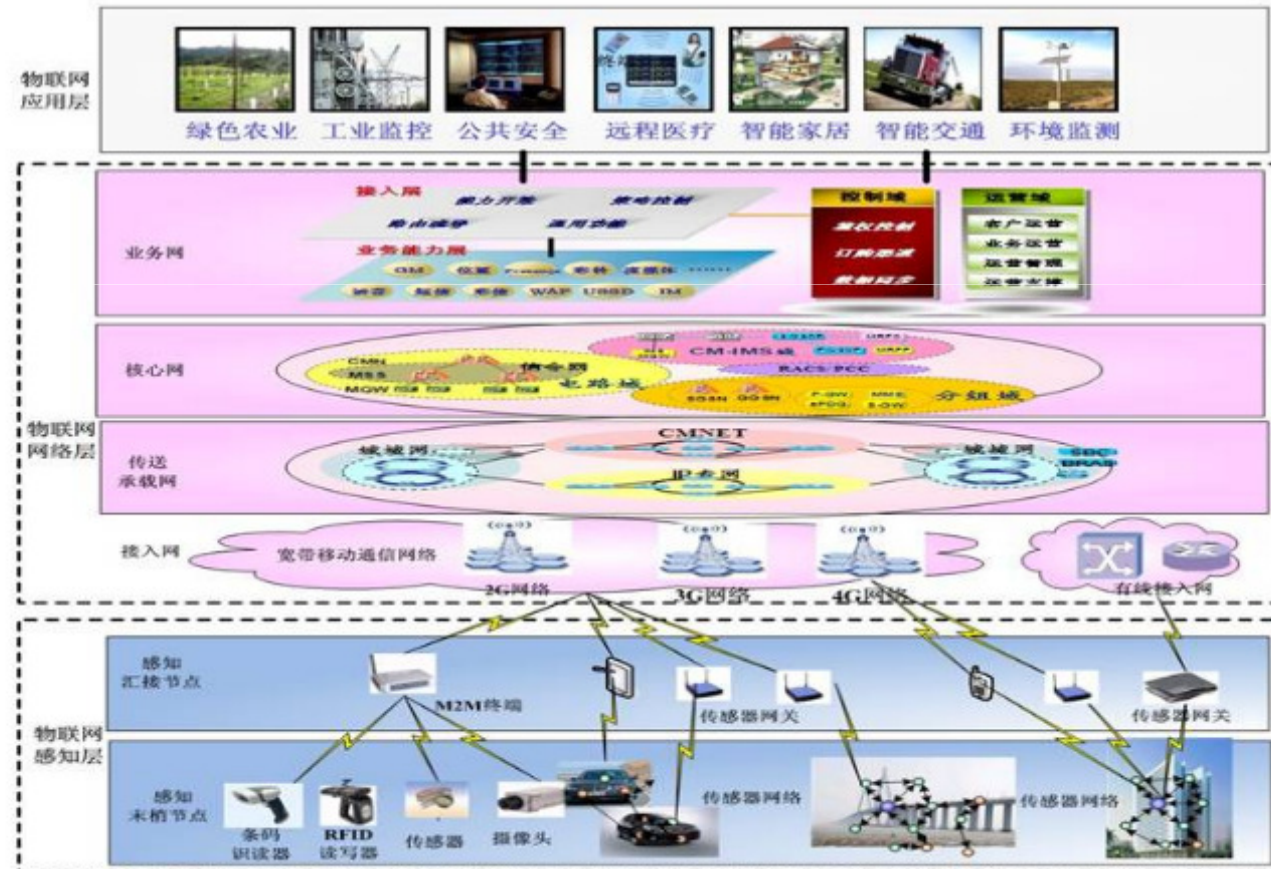
這種方式的雲中心由共有雲和私有雲構成，並且二者可以實現互聯。



# 7.4.1 雲計算與物聯網的結合方式

第三種：信息應用分層處理，海量終端  
 這種方式的雲中心同樣由公有雲和私有雲構成，它的特點是  
 用戶的範圍廣、信息及數據種類多、安全性能高。

分層處理、  
 海量  
 終端連接





## 8. 雲計算/物聯網在零售業的發展



# 8.1 物聯網對零售業的衝擊

## 挑戰/衝擊

通過大數據，移動，物聯網和雲計算的互聯網全渠道零售。

它會影響零售行業，從產品製造、在物流、在上貨架/車、支付方式、到送抵您的客戶。

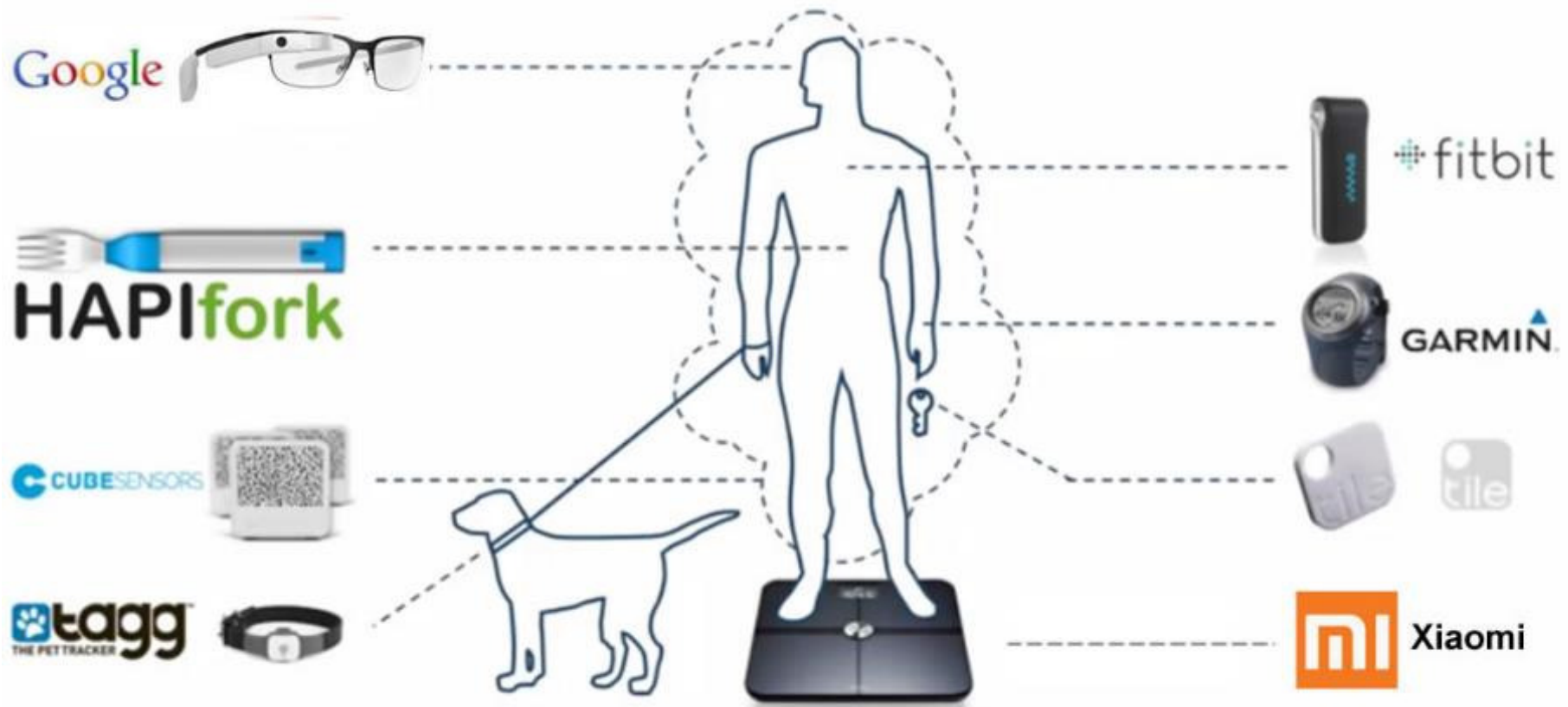
如果你是製造商,你或需要準備你的產品如：RFID 跟踪標籤。如果有這樣趨勢，您可能需要遵循一些政府的政策或行業慣例。這當然也需要一點成本。

如核心業務在雲中的，就需要保護你的客戶和交易數據。要預測和對變化做好準備。例如，使用安全雲作為雲安全。



## 8.2 物聯網應用案例分享

### Smart Living: Personal Hygiene & health



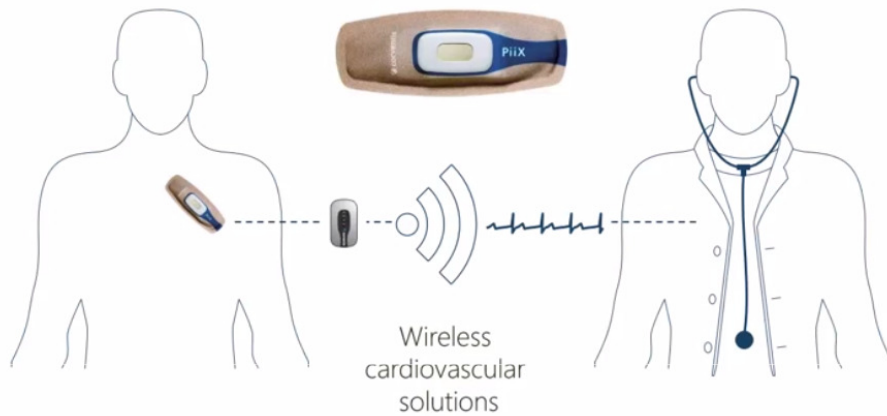
## 8.2 物聯網應用案例分享

### **SMART PILLS (OK, PILL BOTTLE CAPS)**



# 8.2 物聯網應用案例分享

## MEDICAL APPLICATIONS



Corventis

## MyVessyl Cup

It can hold 13 ounces of liquid. The battery takes 60 minutes to fully charge and will last for 5-7 days. Also has wire-free charging.



<https://www.myvessyl.com/>

## HAPIfork

The HAPIfork is an electronic fork that helps you monitor and track your eating habits. It also alerts you with the help of indicator lights and gentle vibrations when you are eating too fast.



<http://www.hapi.com/products-hapifork.asp>

## Smart Tooth Brush

The Beam Brush is a connected toothbrush that engages users with their daily hygiene routine.



<http://www.beamtoothbrush.com/toothbrush/>



# 8.2 物聯網應用案例分享

## Smart Egg Tray

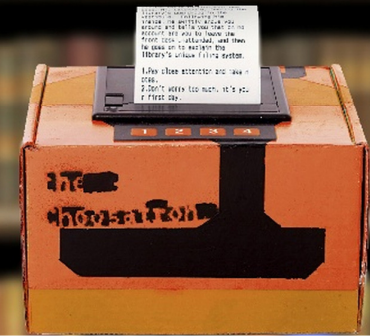
Egg Minder syncs with your smartphone to tell you how many eggs you've got at home (up to 14 eggs) and when they're going bad.



<http://www.quirky.com/shop/619>

## Fiction Arcade Machine

The Choosatron is a fun kit that assembles into a small interactive fiction game box, great for social reading and playing. As you play, you make decisions that affect the outcome of the story, and is printed on a paper scroll.



<http://choosatron.com/>

## Glucose Monitoring

A cellular-powered glucose meter transmits each test result to a secure server and provides instant feedback and coaching to patients. This equips doctors, nurses, diabetes educators with real-time clinical data.



<http://www.telcare.com/>

## Smart Washing Machine

Smart Aqualtis is the first Indesit Company washing machine designed to be integrated in 'Smart' ecosystems, covering a wide range of use cases.



<http://zigbee.org/Products/ByStandard/AllStandards.aspx>



# 8.2 物聯網應用案例分享

## Smart Sprinkler Control

Lono lets you control your sprinkler system anywhere, anytime with your smart phone. And the things that should be automated, finally are.



<http://lono.io/>

## Hydroponic System

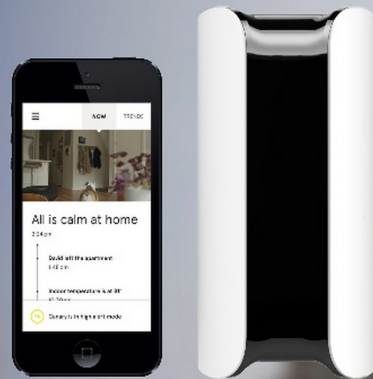
Niwa is the first fully automated hydroponic system that attends to all of your plants' needs and water them, feed them and make sure they have optimal growing conditions 24/7.



<http://geniwa.com/>

## Smart Home Security

Canary is a complete security system packed into a single, device. It adapts to your home over time and sends intelligent notifications with HD video directly to your smartphone.



<http://canaryis/>

## Smart Piggy Bank

The Porkfolio wirelessly connects to an app on your device so you can track your balance and set financial goals from afar. Its nose lights up in celebration every time a U.S. coin is inserted and it holds up to \$100 in quarters.



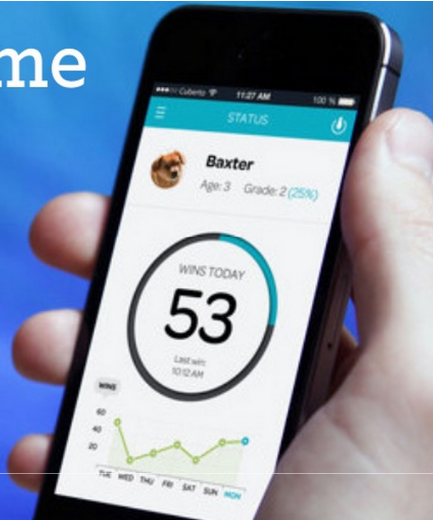
<http://www.quirky.com/shop/607-porkfolio-save-big-with-this-pig>



# 8.2 物聯網應用案例分享

## Smart Pet Game

CleverPet is a smart WiFi-connected game console for your dog. Automatically entertain and educate your dog, even when she's home alone.



<http://getcleverpet.com/>

## Smart Lighting

Control your bulbs one at a time or altogether. Find just the right shade of white. Pick that perfect tone to match the moment. Or recreate any color from a photo.



<http://meethue.com/>

## Analyze with NODE+

Analyze speed, acceleration, movement, direction, shock, tilt, magnetic fields, and more.



<http://variableinc.com>

## Smart A/C

Aros learns from your budget, location, schedule, and usage to automatically maintain the perfect temperature and maximize savings for your home.



<https://www.quirky.com/shop/752-aros-smart-window-air-conditioner>



# 8.2 物聯網應用案例分享

## Smart Sleep System

Visualize your sleep cycles, understand what wakes you up, and compare nights. From the palm of your hand you can control your personalized wake-up, and fall-asleep programs.



<http://www.withings.com/us/withings-aura.html>

## Blood Pressure Monitor

Simply slip on the cuff, turn on the Wireless Blood Pressure Monitor and the Health Mate app will automatically launch.



<http://www.withings.com/us/blood-pressure-monitor.html>

## Sense Mother

Sense Mother is at the head of a family of small connected sensors that blend into your daily life to make it serene, healthy and pleasurable.



<http://sen.se/store/mother/>

## Smart Weather Station

The Netatmo Weather Station allows you to use indoor temperature, relative humidity and CO2 readings to live in a healthier home.



<http://www.netatmo.com/en-US/product/weather-station/>



# 8.2 物聯網應用案例分享

## Dancing Robotic Spider

The TX8 is now Wi-Fi enabled, this opens up a lot more possibilities to the number of things you can do and the ways the robot can be controlled.



<http://www.robugtix.com/t8x/>

## Smart Tennis Racket

Track your game with Babolat's breakthrough innovation. See where you stand in the global ranking and by category within your online community.



<http://en.babolatplay.com/>

## Smart Slow Cooker

Enjoy remote access to all your slow cooker's functions, no matter where you are.



<http://www.belkin.com/us/Products/home-automation/c/wemo-home-automation/>

## Smart Bike

Valour by Vanhawks gives directions, reroutes to avoid traffic, and tracks riding metrics.



<http://www.vanhawks.com/>



# 8.2 物聯網應用案例分享

## Smart Garbage Cans

BigBelly alerts when it needs to be emptied so smarter collection decisions can be made.



<http://www.bigbelly.com/solutions/stations/smartbelly/>

## Smart Gardening

Bitponics gives data on plants and conditions surrounding them for better gardening.



<http://www.bitponics.com/>

## Smart Doorlock

The Genie Smart Lock - A door lock that allows you to lock and unlock your home using your smart phone, bluetooth keyring or computer.



<http://www.geniesmartlock.com/index.php>

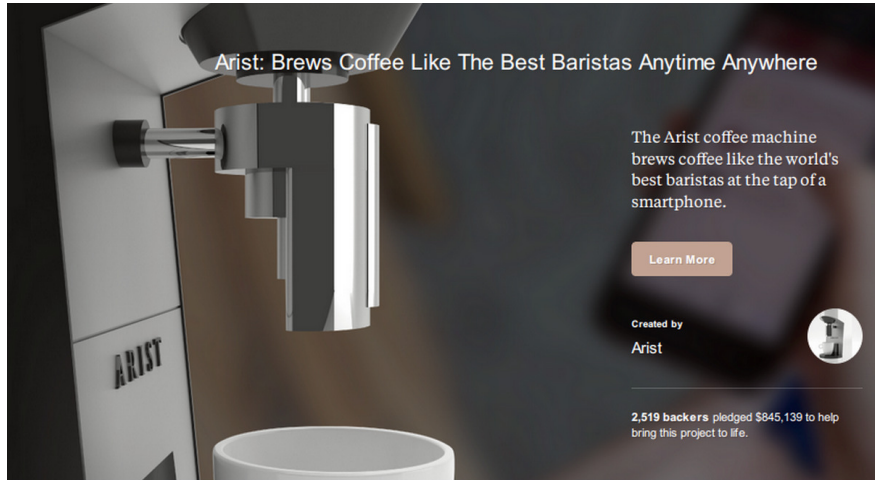
## Smart Socks

Socks infused with proprietary 100% textile sensors. They are paired with a Bluetooth Smart cool and detachable anklelet that delivers accuracy in step counting, speed, calories, altitude and distance tracking.



<http://store.sensoriafitness.com/>

## 8.2 物聯網應用案例分享



Arist features NFC capabilities and what this means is that you can add a NFC tag on a cup. So, whenever you place that particular cup on the machine..

曾獲50個國家逾2000人支持，集資逾80萬美元，創出港人Kickstarter集資最高紀錄的智能咖啡機 [Arist](#)..





## 8.3 總結



- 雲計算與物聯網的結合應用趨勢, 勢在必行。
- 零售業特別是最受影響行業, 發展機會難逢。
- 鑑於雲計算在消費市場的蓬勃發展, 全球供應商可以廉價提供戰略性解決方案, 引進工具和標準化。



- 看起來中小企業好像有很多發展機會:
1. 新的產品發展。
  2. 創新技術看來很容易。
  3. 更多的集資渠道。
  4. 中小企業相對有經濟能力採用這些Pay as you go技術。



- 有可能遇著各種不同的挑戰:
1. 信息安全。
  2. 數據私隱。
  3. 組織與文化變遷。
  4. 傳統企業無法生存。
  5. 基礎設施和社會影響力。
  6. 全球競爭。



- 圍繞移動雲, 物聯網與O2O會整合處理天然的資源, 本地化定位和配合城市化發展(如智能城市)。
- 全方位渠道, 大數據和移動雲計算都集成到超越的電子商務, B2B, B2B2C特定的平台。

## Special thanks to:

- **HKPC**
- **CISCO InternetWorld Stats**
- **IHS 2013**
- **TechinAsia**
- **中國工業和信息化部電信研究院**
- **中国互联网络信息中心 (CNNIC)**
- **IEEE Research paper**

Thank You!  
😊



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[Dennis\\_ck\\_lee@yahoo.com.hk](mailto:Dennis_ck_lee@yahoo.com.hk)



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