



智慧系統與晶片產業發展策略會議

《智慧科技應用與解決方案》

引言人

慧誠資訊 余金樹總經理

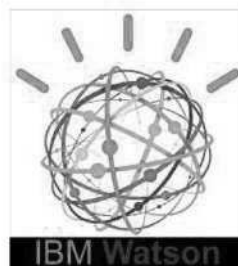
Why Taiwan Matters ?

- ✓ 世界級臨床醫療
- ✓ 世界級健保資料庫
- ✓ 世界級ICT產業資源



台灣的機會和切入點?

- IoT
- AI
- Robot



達文西手術機器

AI化



智動化



智能化



59

智能化醫療的整院輸出



60

智動化臨床輔助



勞力取代

護理輔助

臨床輔助

判讀輔助

治療革命



Transforming Healthcare Through IoT

imedtac 慧誠智醫

AI化的照護輔助



醫事人員管理介面

- 觀護用戶健康狀況
- 設計改善健康計劃
- 提供專業建議
- 不良狀況的警示及回應
- 輸出綜合報告
- 提高醫療品牌形象

專業醫療服務

遠距照護系統

日常居家照護



病患個人健康管理APP

- 關注健康趨勢
- 增進相關常識，分享知識
- 關注親屬好友身體健康
- 獲得專業建議
- 不良狀況的提示
- 改良生活型態
- 改善身體健康及體態



「好孕e定行」APP操作實況
遠端瞭解正確照護資訊，提升自我健康管理

imedtac 慧誠智醫

AI化

智動化

智能化

- AI 在臨床應用(B2B model)
- 區域性、語言、文化的障礙
- 不同DNA的天然障礙

- 專注輔助型機器人應用
- 臨床智慧的靈魂注入
- 善用台灣ICT的靈活性與效率

- 物聯網時代所有產業都是服務業
- 跨領域溝通與信任是台灣大優勢
- 整院輸出的服務是產業突破點

Transforming Healthcare Through IoT

imedtac 慧誠智醫

63

64



智慧系統與晶片產業發展策略會議

《智慧科技應用與解決方案》

引言人

全穩農牧科技 張覺前執行董事



智能科技在 農產業 4.0的應用

全穩農牧科技 張覺前



生物技術在農業上的應用



增加產量

改進品質



降低成本

2017/07/04

2

生物技術在農業上的整合

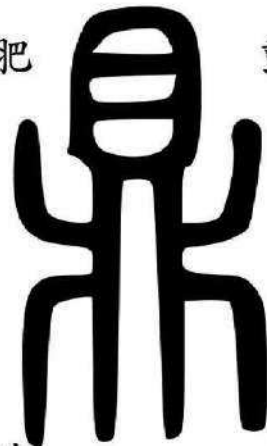


營養 土肥

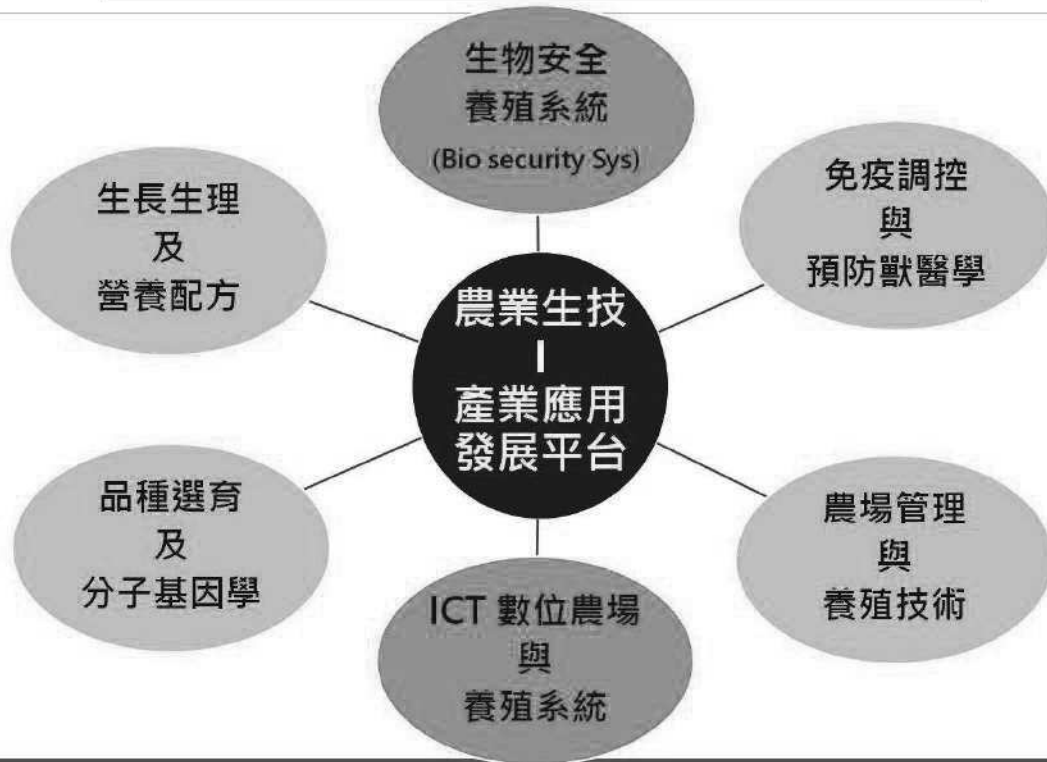
動保 植保

育種 繁殖

農技 農經



農產業整合型技術平台



農業4.0可提供的助力



產業面臨課題

- ✓ 人口高齡化，勞動力不足
- ✓ 生產決策無法即時因應氣候與水資源變化而調整。
- ✓ 小面積耕作效率低，品質差異性大，供貨不穩定

智慧生產

解決方案

- ✓ 導入人機協同作業機械
- ✓ 建構GIS等空間資訊大數據分析決策模組
- ✓ 推動協同合作的智慧化
- ✓ 栽培模式

數位服務

- ✓ 生產環節資訊無法即時分析並串接/因應後段銷售資訊；
- ✓ 消費者/生產者間資訊來源不對等，互信不足。

- ✓ 技術整合
數位化/巨量分析/3D, RF/物聯網/雲端等科技，
推動監測、預警、檢測、預防、控制等，高附加價值數位服務網



**願
景**

打造優質從農環境
開創農業經營新典範



總體目標藉由

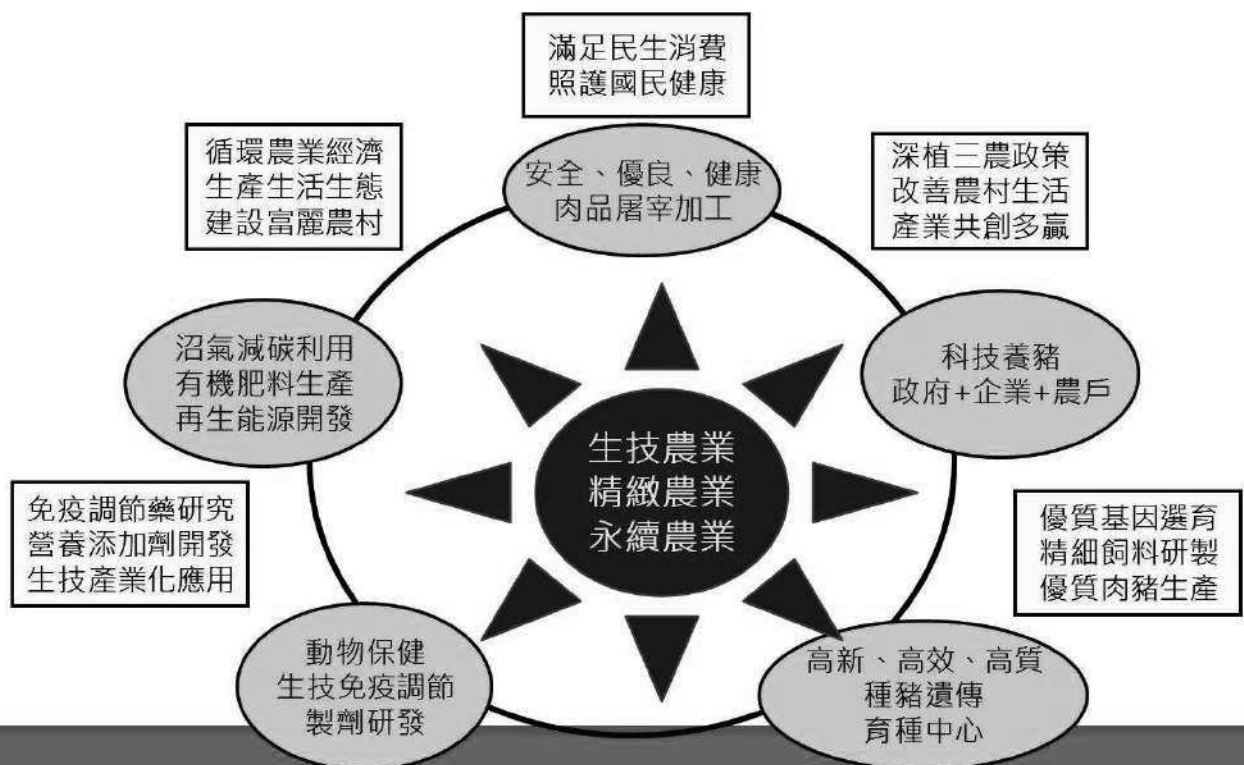
感測設備、智能裝置、物聯網、巨量資料
建構智農產銷與數位服務體系



知識數位化、生產智動化、
產品優質化 操作便利化、溯源雲端化

生技農業、資源農業、循環農業

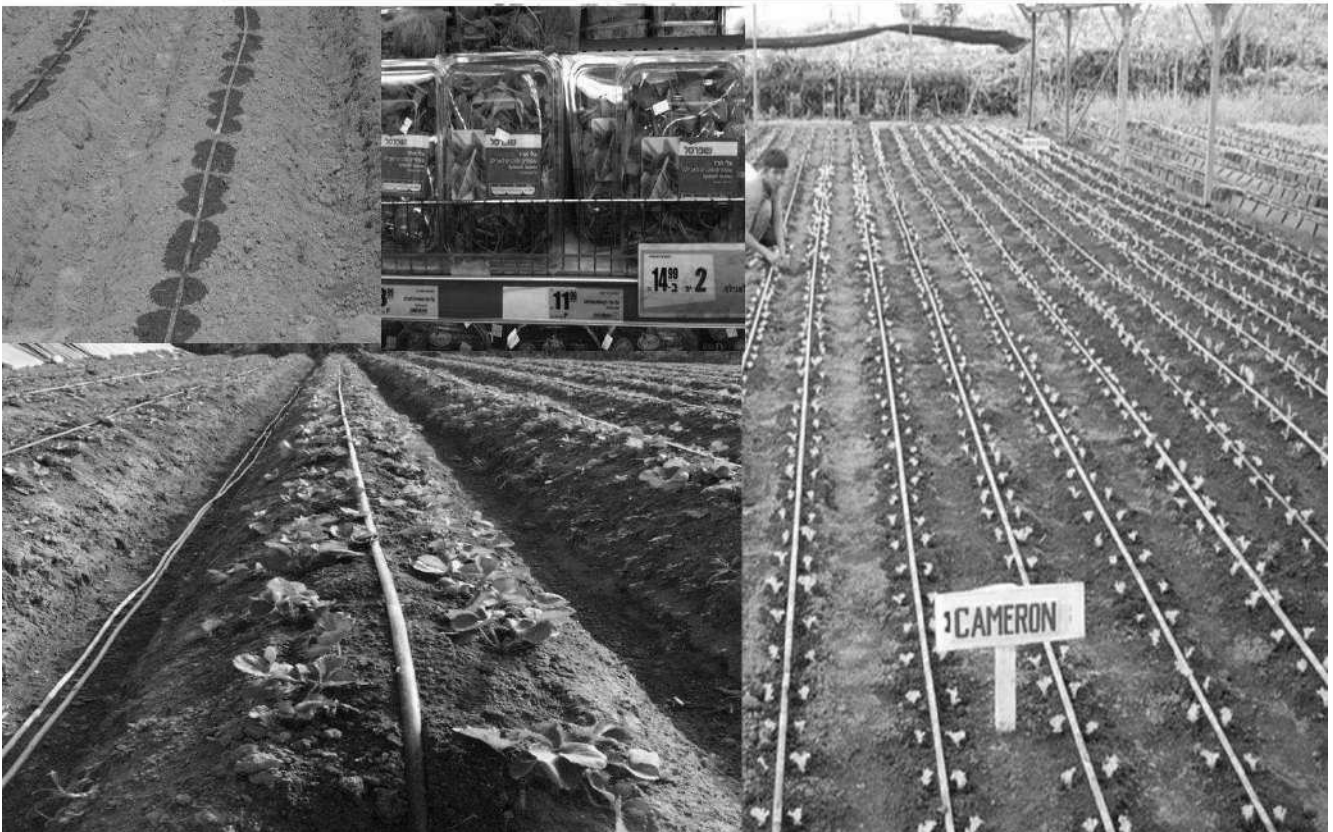
以豬:育種、育苗及育成 之產業模型



農業雲 發展計劃



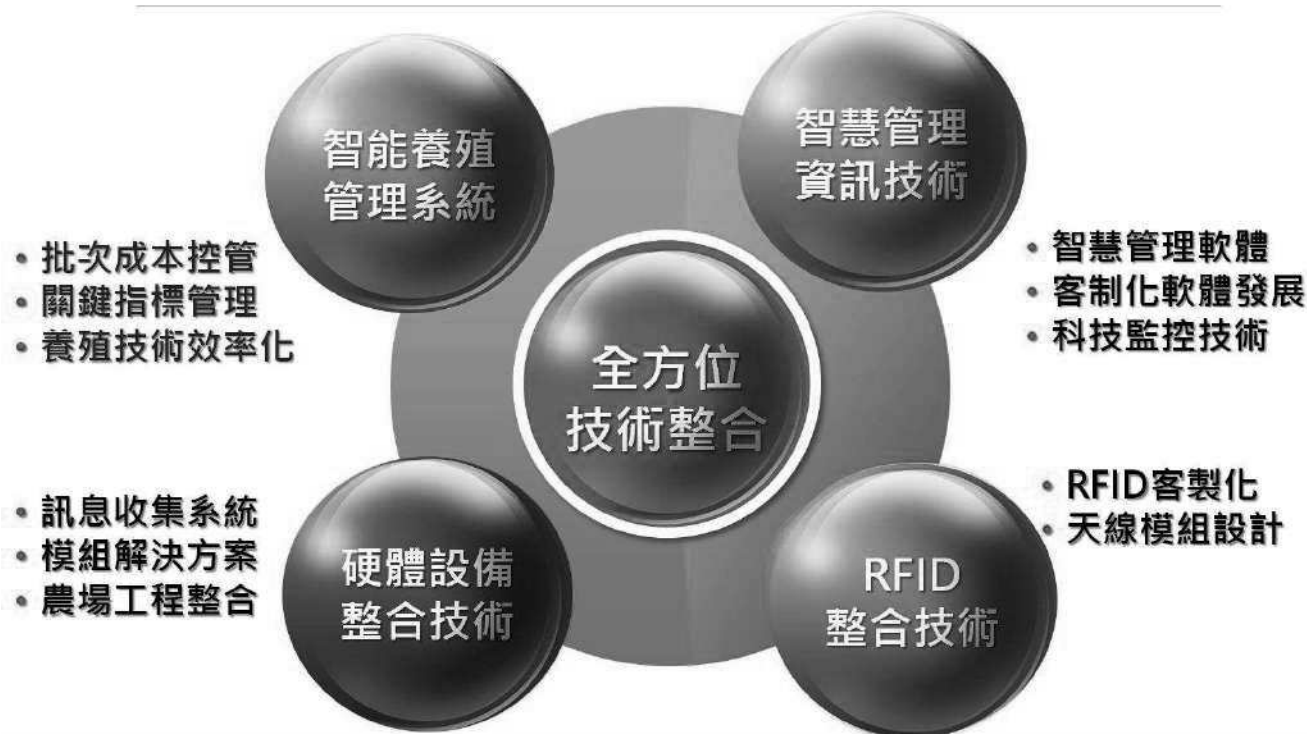
借鏡以色列—國防科技的農業



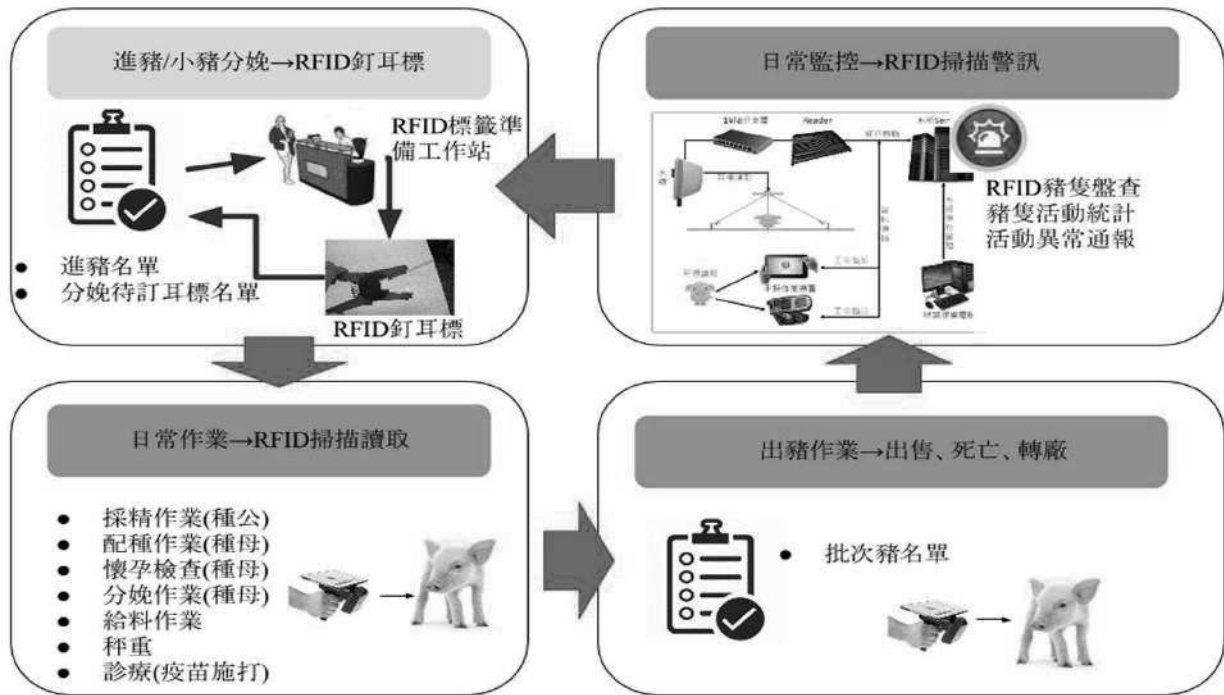
借鏡以色列—整合型科技的農業



智能化全方位技術整合



RFID應用管理



保育豬舍 環境、溫度自動控制系統



體組成的蛋白質沉積

檢測值:

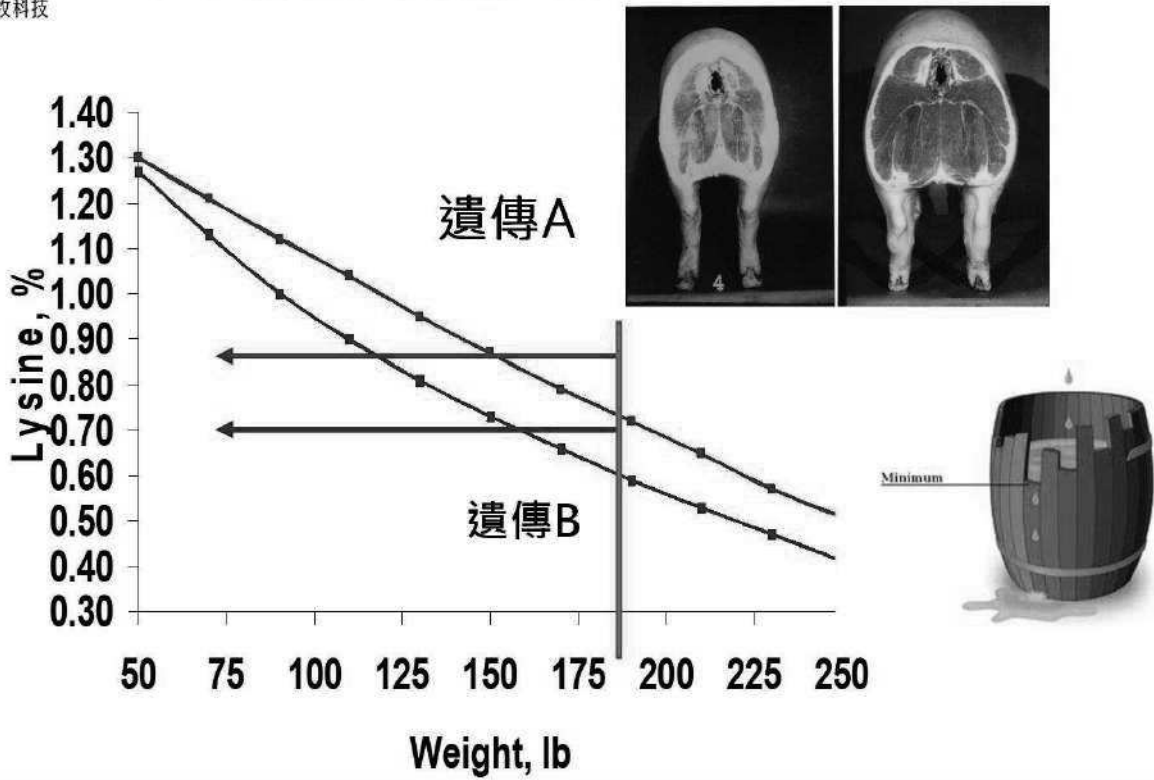
體重Weight

腰眼面積Loin muscle area

背脂(膘)厚Backfat thickness



不同選育豬隻胺基酸需求



建立台灣農產品質競爭優勢

對食品安全更高的承諾

對農生智產權更高的經營保障



BSE Beef



Taiwan Food



AI Poultry Meat



FMD Pork

由整合既有的珍貴無形資產著手

邁向轉譯生技的新視野

農產科技與市場的商機

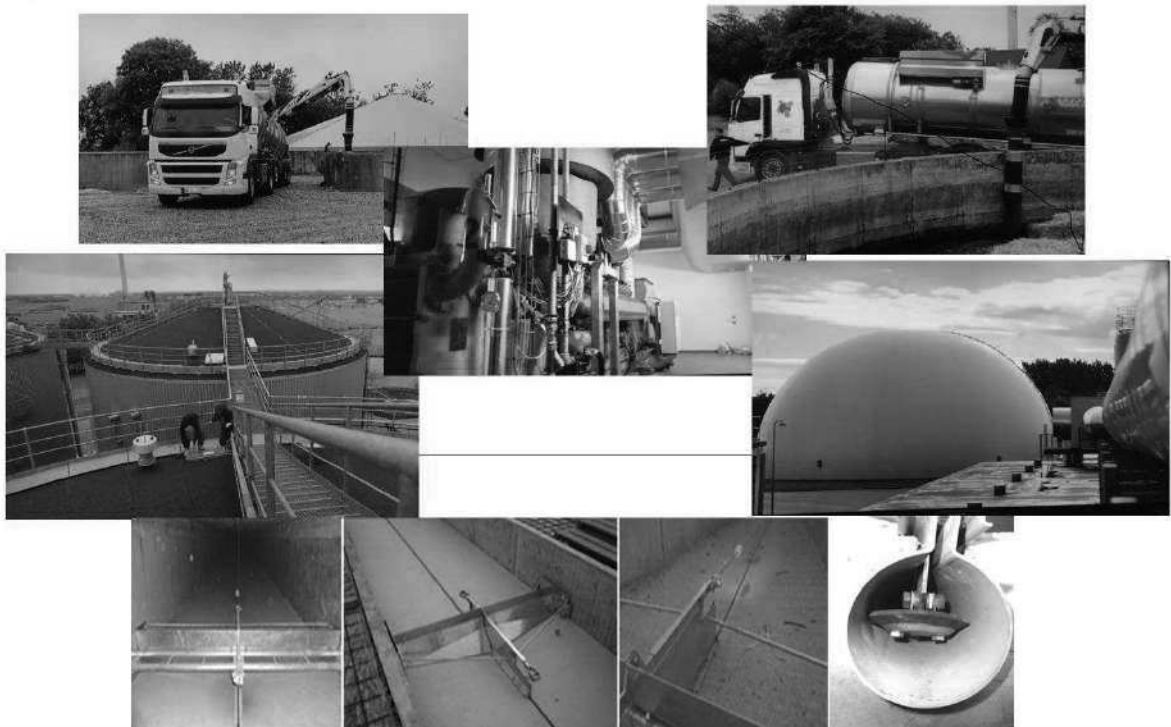


1. 農業生技---育種,栽培...
2. 禽畜生技—育種,動保,營養...
3. 漁業生技---種源,孵化,育苗...
4. 產品行銷—管理,區域,全球供應...

2017/07/04

18

乾清糞發酵有機肥及 沼氣發電



綠色、循環、低碳 養殖及建築工藝

畜牧新能源除了沼氣發電外，
可同時發展包括「畜光一體」、「農光互補」等
太陽能發電專案。

台灣光伏豬舍

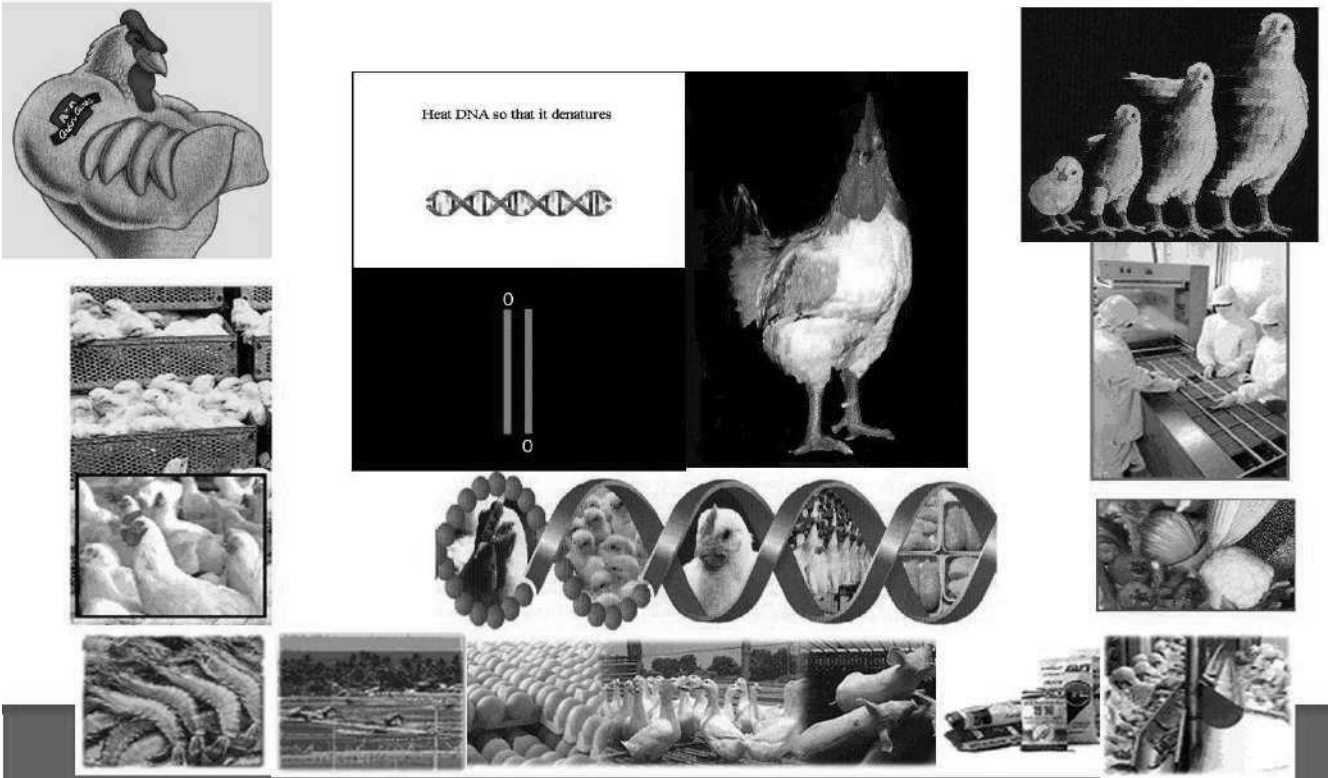


家佳康
Jiakaikang
中國體育代表團肉類食品供應商



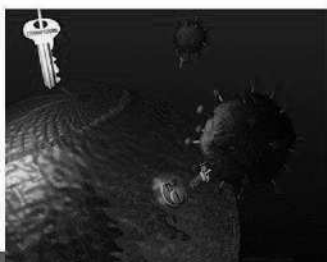
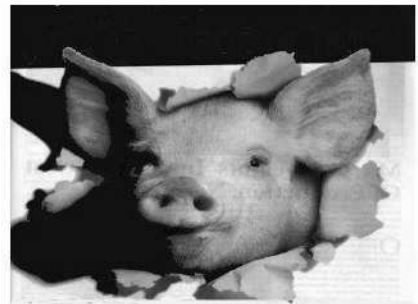
Agri- Aqua & Animal
innovation,
integration,
intellectualization,
industrialization,
internationalization

從研發到農場；從農場到餐桌 轉譯農業科技 整合應用

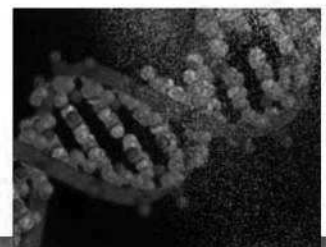


深耕本業,經營全球

Inspired by consumers, endorsed by society
滿足消費者需求，適應社會需要



Thank You





智慧系統與晶片產業發展策略會議

《智慧科技應用與解決方案》

引言人

光寶科技 安志東營運總監



智慧科技應用與解決方案

安志東

CMO

智能生活與應用事業群

光寶科技

SMART LIFE & APPLICATIONS (SLA) SBG

Industrial Automation



- VFD
- Servo/Motor
- PLC

Video Surveillance

- IP Cam
- NVR Roadmap
- IP CAM VMS Software
- NVR CMS Software
- NVR Mobile Viewer



Communication Module

Worldwide best module supplier since 2004 (64M Units sold annually)



Smart Vehicle Applications

Specialized in

- HUD
- Wireless Charger
- ADAS Sensor



Leotek



1,500,000pcs

LED street light installed worldwide

Automotive Electronics



Vehicle Lighting (LED Lighting Module)
20M unit sold annually.
Delivers 10M pcs automotive camera modules by 2016

Networking



- Enterprise WLAN Access Points
- Branch Routers and POE Switch

Current SMART Applications

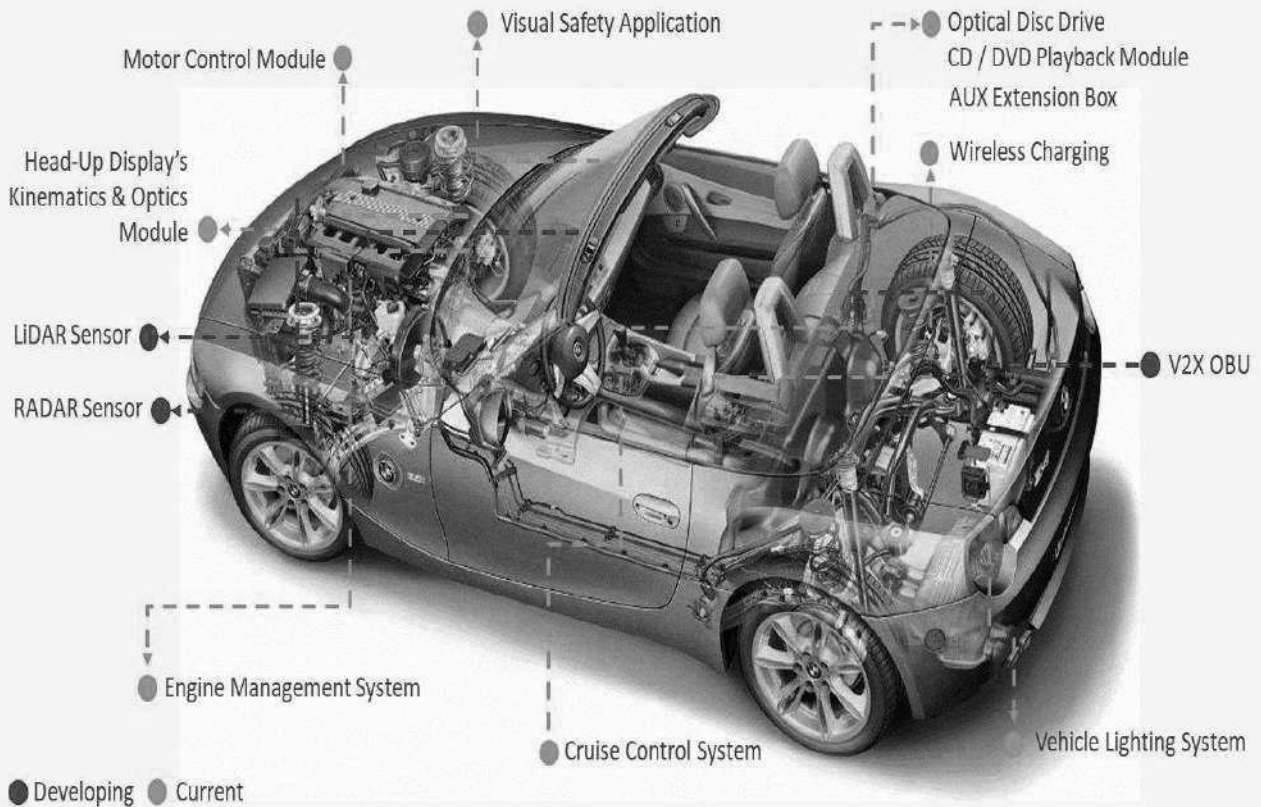
3



- 1) Smart AUTOMOTIVE
- 2) Smart CITY

1) Smart AUTOMOTIVE

LITE-ON Automotive Product Portfolio



ADAS Background



1.25 million
people were killed on the world's roads in 2013.

Global status report on road safety 2015

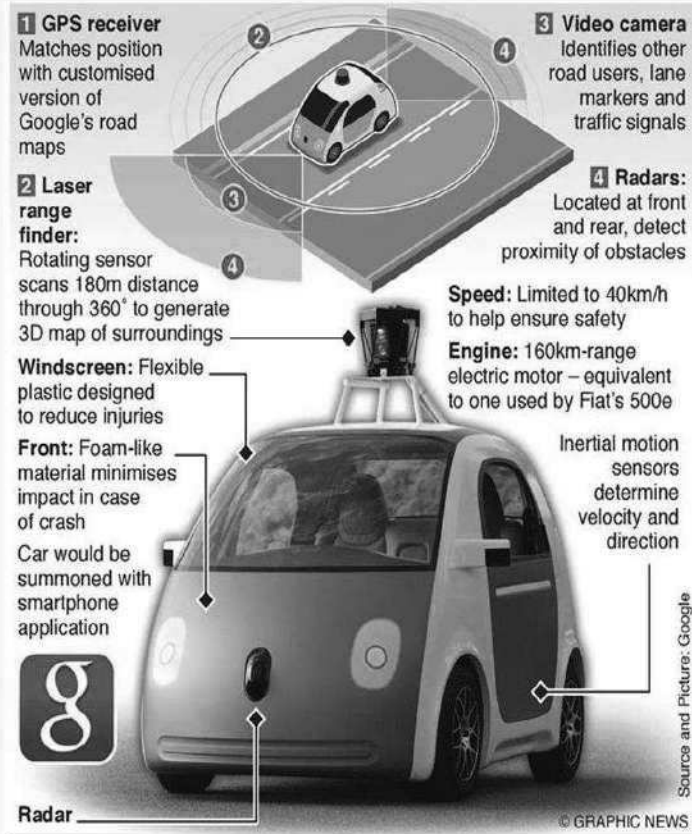
NHTSA TRAFFIC SAFETY FACTS, Feb 2015
Critical Reasons for Crashes
www.nhtsa.gov

Attributed to	%	Reason	%	Behavior
Drivers	94%	Recognition	41%	<ul style="list-style-type: none"> •driver's inattention •internal and external distractions •inadequate surveillance
		Decision	33%	<ul style="list-style-type: none"> •driving too fast •too fast for the curve •false assumption of others' actions •illegal maneuver and misjudgment of gap or others' speed
		Performance	11%	<ul style="list-style-type: none"> •overcompensation •poor directional control
		Non-Performance	7%	<ul style="list-style-type: none"> •sleep
		Other	8%	
Vehicles	2%			
Environment	2%			
Unknown	2%			

(Data Source: NHTVCCS 2005-2007)

Final Solution - Autonomous Driving (AD)

Sensor installation considers from *Surrounding Perception*



SAE Level of Automated Driving

ADAS

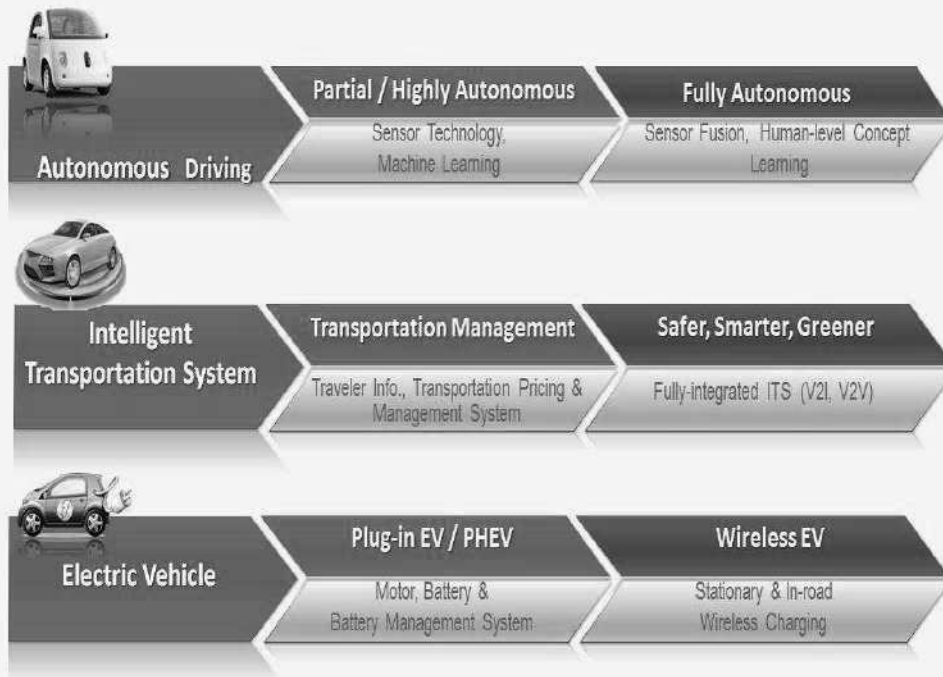


AD

SAE level	Name	Narrative Definition	Execution of Steering and Acceleration/Deceleration	Monitoring of Driving Environment	Fallback Performance of Dynamic Driving Task	System Capability (Driving Modes)
Human driver monitors the driving environment						
0	No Automation	the full-time performance by the human driver of all aspects of the dynamic driving task, even when enhanced by warning or intervention systems	Human driver	Human driver	Human driver	n/a
1	Driver Assistance	the driving mode-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task	Human driver and system	Human driver	Human driver	Some driving modes
2	Partial Automation	the driving mode-specific execution by one or more driver assistance systems of both steering and acceleration/deceleration using information about the driving environment and with the expectation that the human driver perform all remaining aspects of the dynamic driving task	System	Human driver	Human driver	Some driving modes
Automated driving system ("system") monitors the driving environment						
3	Conditional Automation	the driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task with the expectation that the human driver will respond appropriately to a request to intervene	System	System	Human driver	Some driving modes
4	High Automation	the driving mode-specific performance by an automated driving system of all aspects of the dynamic driving task, even if a human driver does not respond appropriately to a request to intervene	System	System	System	Some driving modes
5	Full Automation	the full-time performance by an automated driving system of all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver	System	System	System	All driving modes

Mega Trend and Technology

8



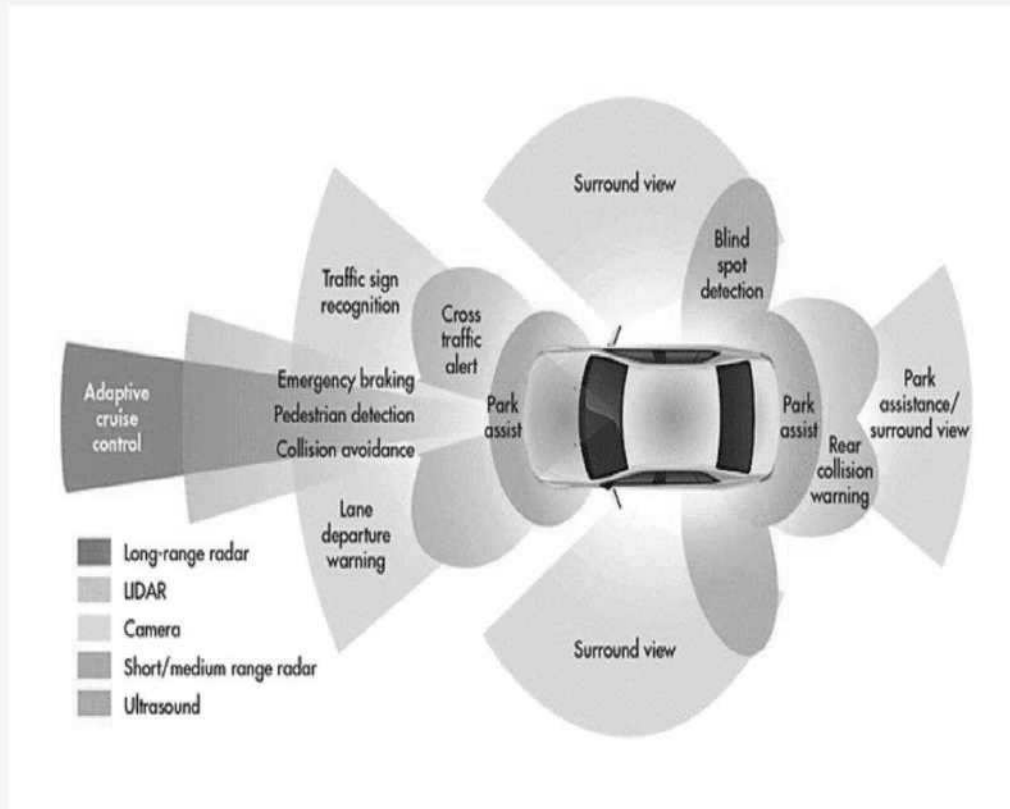
New Product for ADAS

9

Automotive Product Portfolio									
System	Advanced Driver Assistant System (ADAS)								
Category	Sensor Fusion				Connectivity			Head-Up Display	
Product	Perception Platform	LiDAR	Camera	Radar	V2X	Telematics Box	Car AVB Switch	C-HUD	W-HUD
System	Comfort & Convenience					Chassis & Body			
Category	Infotainment			Accessory		Controller			
Product	Android Infotainment	CD/DVD Module	SSD Module	AUX Box	Wireless Charger	Motor Control ECU	Body Control Module		

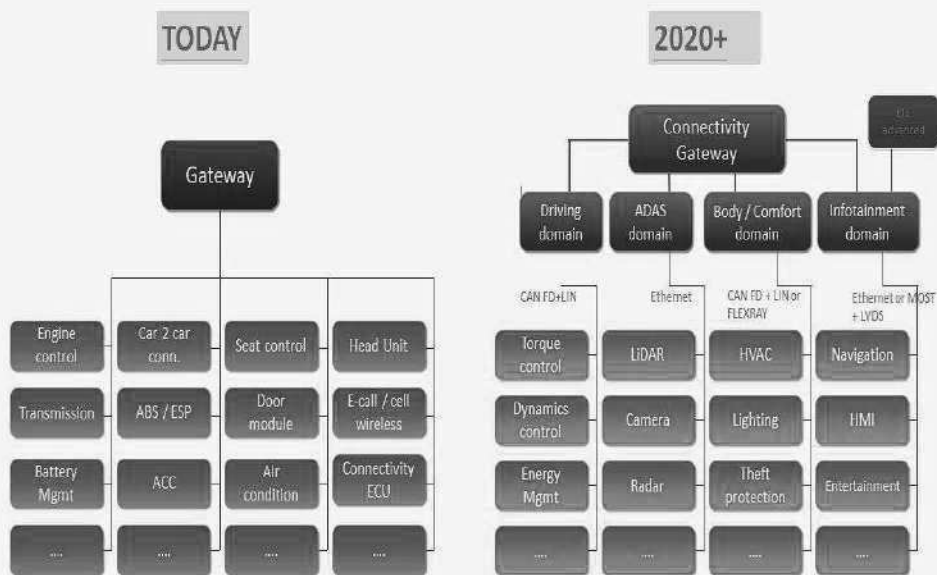
ADAS sensor application

10



The architecture of car electronics is evolving, from distributed control (per ECU per mechanical function) to distributed computing.

11

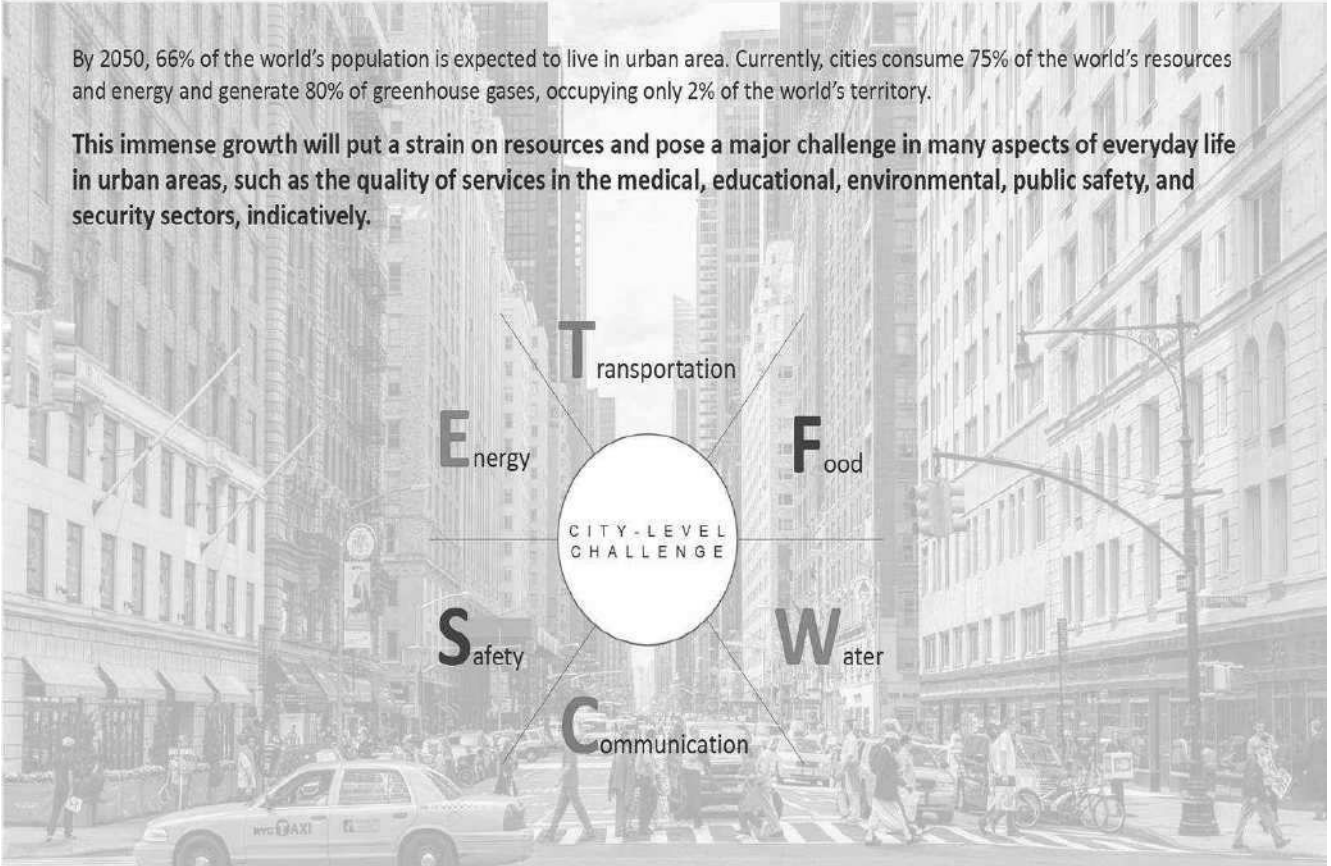


2) Smart CITY

12

By 2050, 66% of the world's population is expected to live in urban area. Currently, cities consume 75% of the world's resources and energy and generate 80% of greenhouse gases, occupying only 2% of the world's territory.

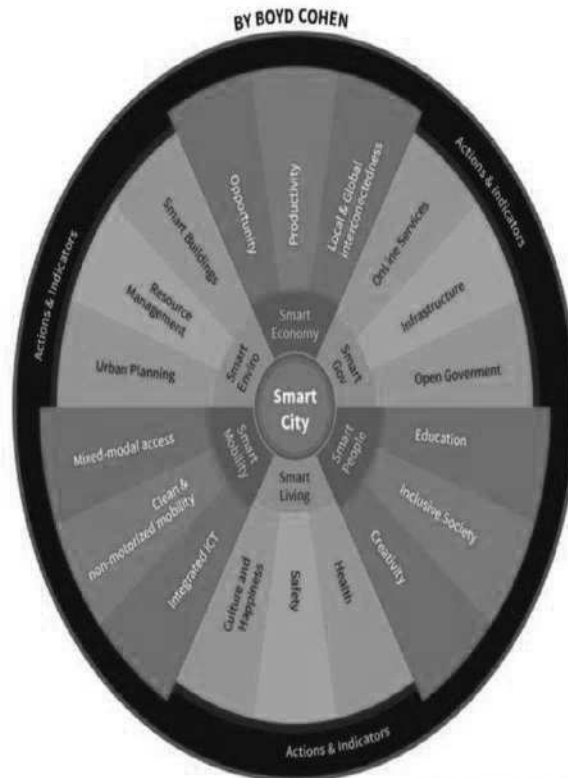
This immense growth will put a strain on resources and pose a major challenge in many aspects of everyday life in urban areas, such as the quality of services in the medical, educational, environmental, public safety, and security sectors, indicatively.



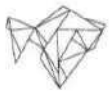
13



WHAT
CONSISTS
OF A SMART
CITY?

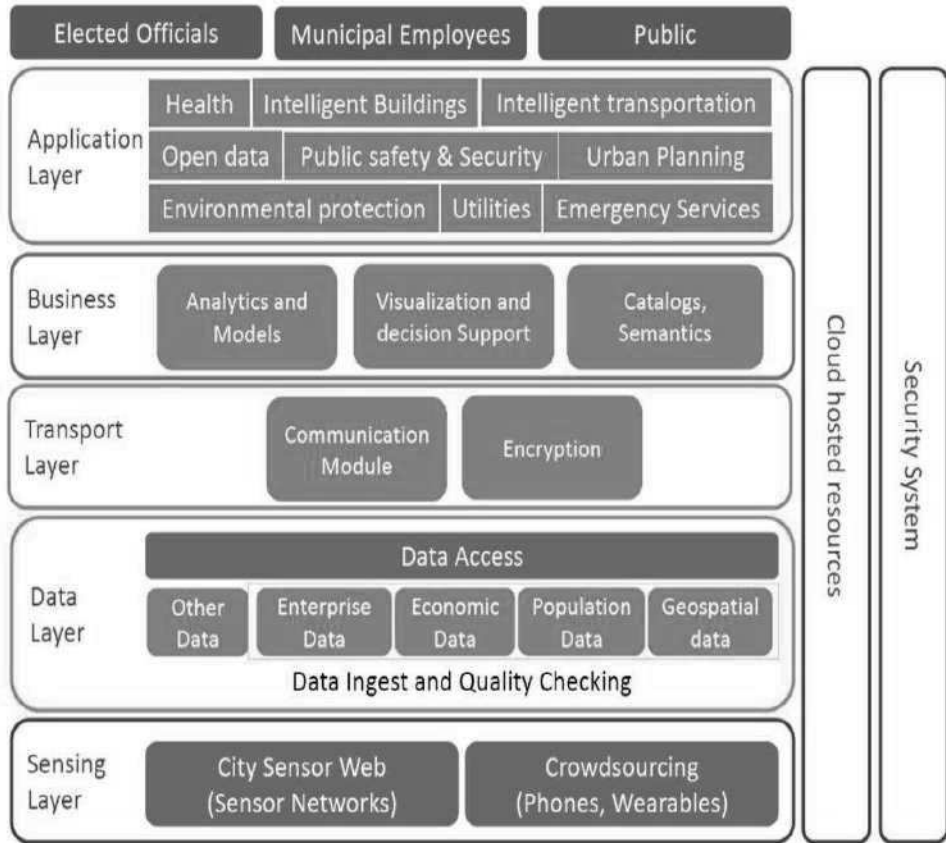


The Smart City Wheel by Boyd Cohen. One of the more holistic ways for smart city ranking –



SMART Application

THE FRAMEWORK FOR SMART CITY



The Link to Smart City Evolution

Evolve your city's infrastructure by linking smart city solutions and big data to your intelligent gateway network



Intelligent Lighting

Reduce street light maintenance and management costs.
Utilize LED technology for improved visibility and reduced traffic accidents.



Integrated Sensing

Combine solutions onto one platform.
Keep track of the lighting, environmental, and safety conditions.



Communication Networking

Increase internet accessibility throughout the city.
Access data anytime, anywhere safely.

1. Intelligent Lighting

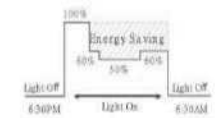
Intelligent Lighting

- Save Energy** Track and allocate the energy consumption of street lights to where it is needed most.
- Reduce Costs** Pin point exactly where malfunctions occur for swift and efficient maintenance actions.
- Improve Public Safety** Instant lighting system feedback avoids accidents due to lighting system malfunctions.
- Street Light Solutions** Reduce street light maintenance and management costs.



LEOTEK lighting solutions

- Photocell**
The photocell will detect and adjust the brightness of the light depending on the remaining natural sunlight.
- Motion Sensor**
Motion sensors will turn the lights on only when it senses someone near by, thus utilizing energy only when it is needed.



- Dimming System**
Reduce energy consumption by dimming street lights during periods of low traffic. Various settings are available to meet the requirements of different scenarios.

2. Integrated Sensing

Integrated Sensing

What is our solution?

The concept is for a modularized and standardized platform that combines sensor, connectivity, and management system. The modular design makes it comprehensive and easy enough to support different applications and allows for expansion possibilities that can fulfill the changing demands of the Smart City world.

Fulfill Diverse Smart City Application Development
Highly Integration + Standardization + Modular Design



- Agriculture Solution**
- Air Quality (PM 2.5)
- Grass / Forest Fire Detection
- Rain Station
- Water Level Sensor
- Moisture Sensor
- Weather Station
- (Temperature/Humidity/Barometric pressure/UV)

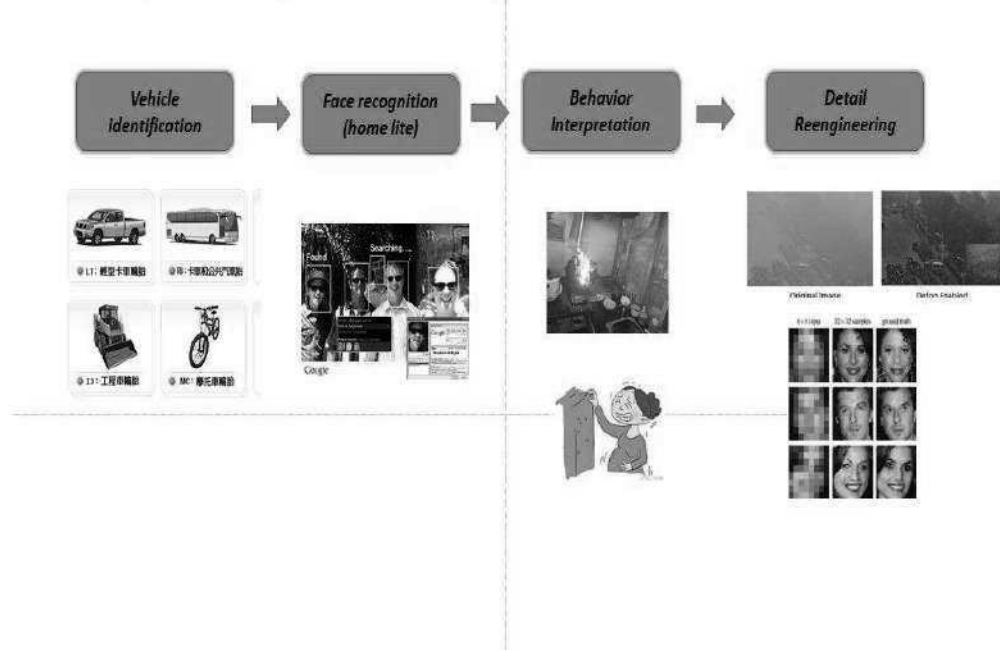
- Security Solution**
- Security Camera
- People Counting
- Intrusion
- Loitering
- Face Recognition



- Traffic Solution**
- Video Camera
- Car Counting
- License Plate Reading
- Line Crossing
- Parking Sensor

CAMERA Sensor

Video Surveillance for both indoor (Face & Object recognition) and outdoor (reducing false alarms)



3. Communication Networking

Communication Networking

19

Simplify vertical device integration complexity
Enable horizontal service integration and aggregation



AI Consultant

Dr. Winston Hsu (徐宏民)

- Professor in NTU CSIE and GINM, since Feb. 1, 2007
 - Affiliated with Communication and Multimedia Lab (CMLab)
- PhD from Columbia University, New York, 2007
- **4 years in (startup-period) CyberLink Corp. (訊連科技)**
 - Founding Engineer, Project Leader, and RD Manger
- Recognitions & Awards
 - 3500+ Google citations; H-index: 27; i10-index: 51
 - Director for **NVIDIA AI Lab** (NTU), AE for IEEE Trans. on Multimedia; AE for IEEE Multimedia Mag., Organizing Committee for ACM Multimedia 2010/2013/2015/2016, IEEE/ACM Senior Member, MSR Visiting Researcher (2014), Visiting Researcher IBM Watson (2016)
 - Awards: 2011 Ta-You Wu Memorial Award (Young Researcher), **FIRST PRIZE** in ACM Multimedia Grand Challenge 2011, **FIRST PLACE** in **MSR-Bing Image Retrieval Challenge** 2013, **Microsoft Research Award** 2009/2012/2014/2015, 2013 National Outstanding IT Elite Award, 2012 NTU EECS Academic Contribution Award (top 3%), etc.



University Partner and NVIDIA challenge winner

Dr. Chun-Yi Lee (李濬屹)

- **Affiliation**
 - Assistant Professor
 - Department of Computer Science, National Tsing Hua University
- **Education**
 - Ph.D. and M.A.: Princeton University, U.S.A.
 - M.S. and B.S.: National Taiwan University, Taiwan
- **Work Experiences**
 - Senior Engineer at Oracle America, Inc. (2012 ~ 2015)
 - Summer Intern at Tensilica, Inc. (2011)
- **Honors & Awards**
 - Champion at NVIDIA Intelligent Embedded Robotic Challenge (2016)
 - ICCD Best Paper Award (2009)
- **Publications and Academic Activities**
 - Several key conference & journal papers at DAC, ICCD, TVLSI, etc.
 - Served as TPC member, session chair, and paper reviewer multiple times



LITEON

Best Partner in Opto-Electronic,
Eco-Friendly and Intelligent Technologies.

