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French industry and innovation policy

21th France-Taiwan industrial cooperation committee
June, 12th, 2014, Paris




direction générale de la compétitivité de l'industrie et des services




1

Summary

1. Industry in France
2. Sector based industrial policy
3. Innovation 2030



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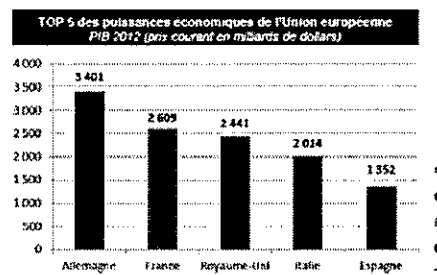
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France : a worldclass economic power

- World's 5th largest economy (2 114 Bn€ GDP in 2013), Europe's second largest economy
- World's 5th largest exporter of goods, 6th for services
- 31 French companies among the 500 first in the world (Germany : 29, UK : 26)
- A large and increasing market opportunity with 66M inhabitants

An ecosystem favourable to R&D and innovation

France is a major country regarding direct foreign investment



(Fond Monétaire International, Base de données
« World Economic Outlook », mai 2013)

An industrial tradition

- France has a great tradition of industrial inventions (TGV, chips, etc.)
- France has the expertise to develop complex industrial systems (nuclear, space, aeronautics, etc.)
- Industry is still important
 - First European country for aeronautics, aerospace and nuclear
 - 2nd European country for chemical industry, 3rd for food-processing industry, 4th for digital industry
 - Worldclass leaders : EDF, Areva, Airbus, Air Liquide, Total, Essilor, Gemalto, L'Oréal, LVMH, Michelin, Saint-Gobain, Veolia, Vinci...



Priority to industrial renewal

- **Decreasing of**
 - Industry share of GDP (11,2% in 2012)
 - Industrial employment (-25% jobs since 2000)
 - Industrial external balance (deficit \approx 2% of GDP)
 - French export market share (from 6,3 % in 1999 to 3,1 % en 2013)
 - **Yet, industry is essential to economy : 82 % of R&D and 75 % of export**
- ⇒ **Priority to industrial renewal**

Summary

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2. Sector based industrial policy
3. Innovation 2030

Sector based industrial policy

- **A threefold policy:**
 - **Sector strategic committees** : large partnership for each sector, so as to elaborate and put in place a collective and mutually beneficial short-term strategy –“*contrat de filière*” -
 - **« The New face of Industry » initiative** : to support 34 middle-term industrial plans that will enable companies established in France to keep or gain leadership on their markets.
 - **World innovation challenge** and support to **Key Enabling Technologies** : to develop a long-term cutting-edge industrial research, with strong public support, so as to keep the technological leadership necessary to address 7 very promising emerging markets.

The new face of Industry

- **The aim is to regenerate competitive advantages for major industrial sectors in France by providing an extensive range of public support, in order to maintain and develop industrial employment.**
- **French administration, along with McKinsey&Company, carried out a thorough analysis of the dynamics of industrial sectors:**
 - granular analysis of the fastest growing activities in each sector, and the most promising in terms of employment in France
 - identification of public levers to boost their development
 - benchmark of public policies in OECD countries regarding those activities

34 industrial plans

- | | |
|--|--|
| <ul style="list-style-type: none"> • Renewable energies • Affordable sober car (less than 2 l per 100 km) • Charging stations for electric car • Batteries • Driverless car • Electric plane and new generations of aircrafts • Blimps & heavy loads • Embedded software • Electrical propulsion for satellites • New generation high speed train • Ecological ship • Technological and functional fabric • Wood based industries • Recycling and green materials • Building insulation • Smart grids | <ul style="list-style-type: none"> • Water processing • Green chemistry and bio fuel • Biotechnologies • Hospital ICT • Medical devices • Healthy and sustainable food • Big data • Cloud computing • e-Education • Telecommunication sovereignty • Nanoelectronics • Internet of Things • Augmented reality • Contactless services • High Performance Computing • Robotics • Computer security • Advanced manufacturing |
|--|--|



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34 industrial plans

- Since the 34 plans were launched in September 2013, three steering committees took place in March, April and June 2014:
 - 16 roadmaps have already been signed :
 - March 5th : affordable sober car (less than 2 l per 100 km), charging stations for electric car electric plane and new generations of aircrafts batteries electrical propulsion for satellites.
 - April 4th : advanced manufacturing smart grids embedded software high performance computing.
 - June 7th : cloud computing , telecom sovereignty (incl. 5G), cybersecurity, augmented reality, technological textiles, water processing, healthy and sustainable food
- The other roadmaps are planned to be signed during summer.
- The roadmaps concretely define:
 - A precise agenda of private and public actions
 - The role of each participant
 - The objectives of the plan



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The Innovation 2030 “Worldwide Innovation Challenge”

- **Concerns seven industrial challenges identified for 2030 by a Commission directed by Anne Lauvergeon**
- **They are based on disruptive innovation**
- **They represent strategic markets/ambitions for the French economy :**
 - Energy storage
 - Recycling of metals
 - Development of marine resources
 - Plant proteins and plant chemistry
 - Personalized medicine
 - Silver economy
 - Big Data
- **Public support : 300 M€**



Thank you for your attention



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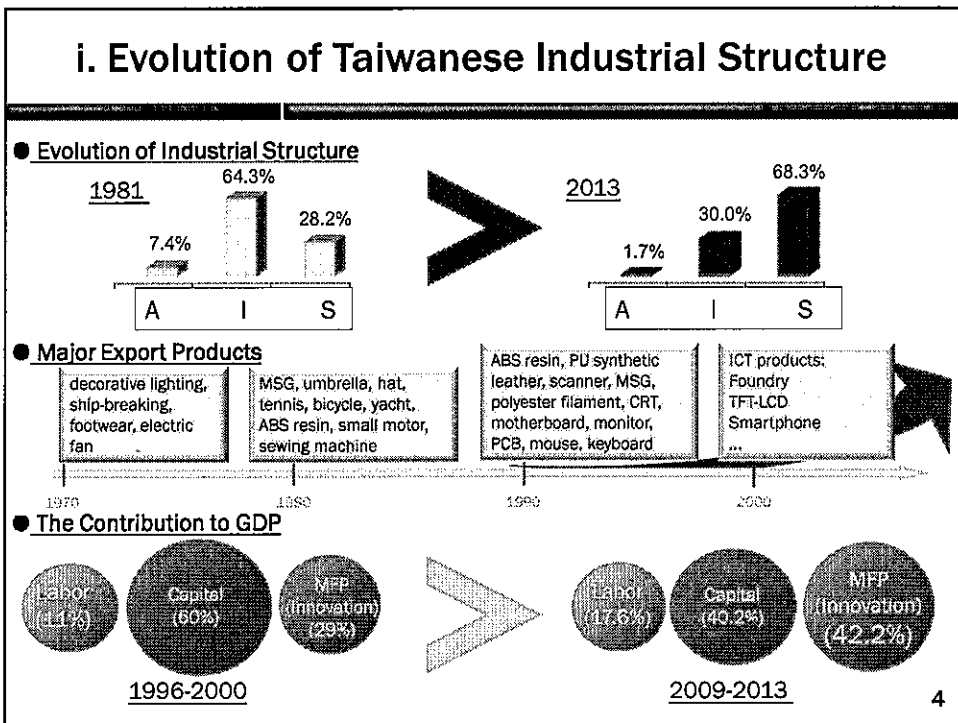
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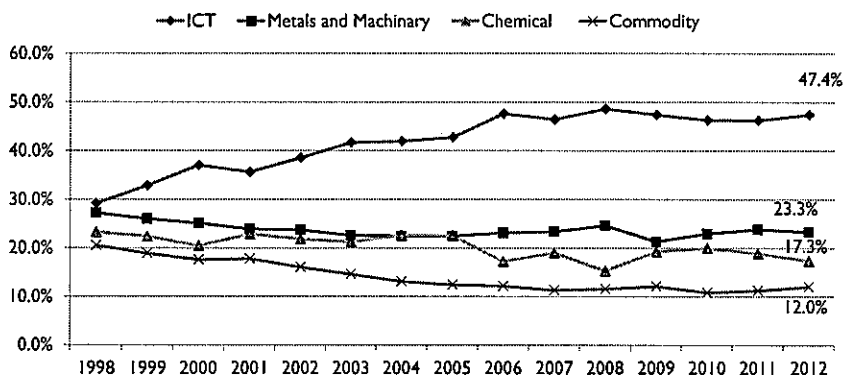
- I. Current Status
- II. Challenges
- III. Opportunities
- IV. Future Prospects

I. Current Status



ii. Agile Adjustments in the Hi-Tech Industry

Taiwan's Market Value as a Percentage of GDP, 1998 - 2012



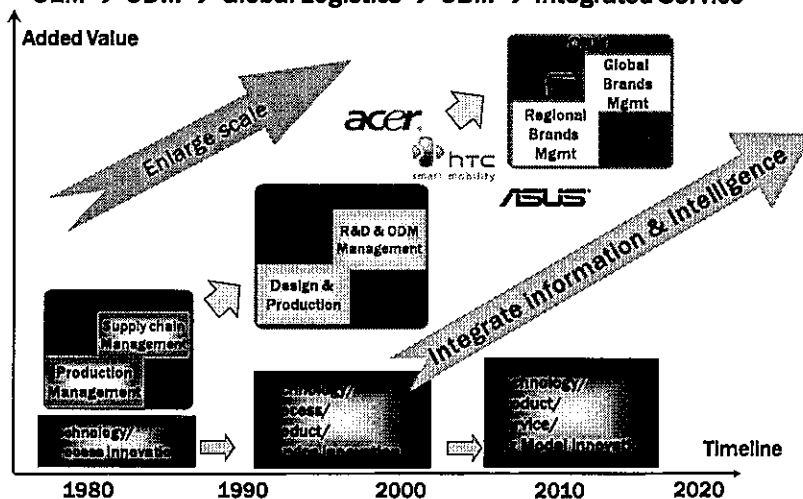
Source: Directorate General of Budget, Accounting and Statistics, compiled by MIC, June 2014

- ❖ ICT-led Manufacturing Industry : since the late 1990's, Taiwan's economy has been underpinned by the ICT Industry with its growth spilling over to the manufacturing industry
- ❖ Shipment value weighted on components and contract manufacturing business: the ICT Industry mainly centers on key components and contract manufacturing business but is lack of materials, equipment, total solutions and brands
- ❖ Economic growth momentum prone to economic circles : following the global financial turmoil in 2008, Taiwan's economy growth has been dragged by global economic situations and declining PC sales

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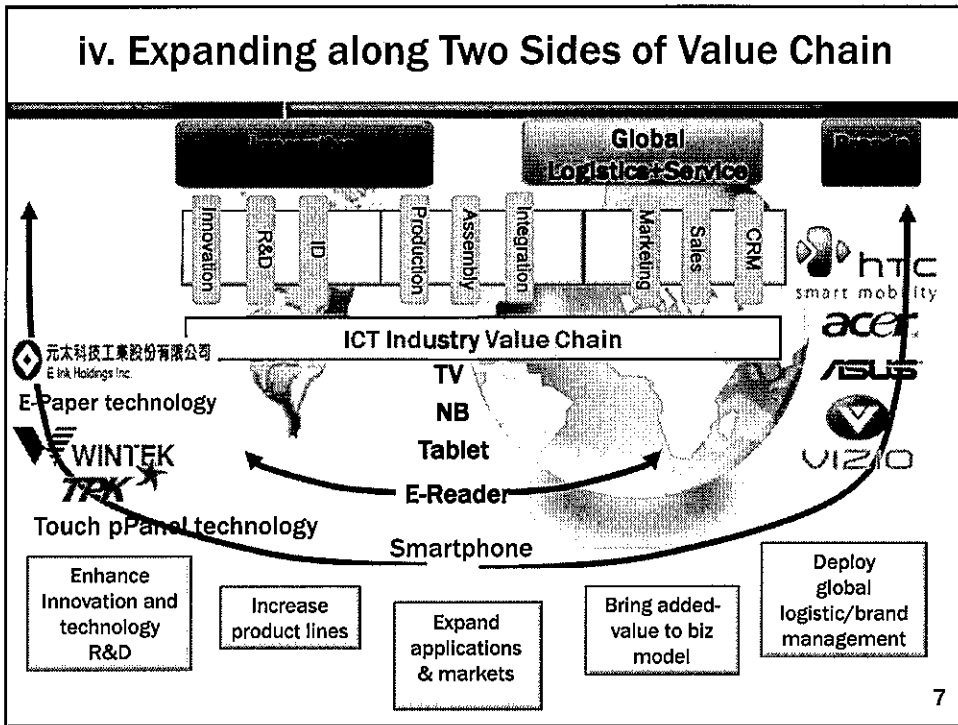
iii. Restructuring Towards Higher Value Activities

OEM → ODM → Global Logistics → OBM → Integrated Service



❖ Strategic transformation point: Acer in 2000, HTC in 2006, and ASUS in 2008

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v. Global Recognitions

Institute	Results
WEF (2013-2014) -Global Competitiveness Index	Global Ranking: No.12 -Innovation: No.8 Asian Ranking: No.4
WEF (2013) -Networked Readiness Index	Global Ranking: No.10 Asian Ranking: No.2
BERI (2013) -Profit Opportunity Recommendation	Global Ranking: No.3 Asian Ranking: No.2
IMD (2013) -The World Competitiveness Yearbook	Global Ranking: No.11 Asian Ranking: No.3
Waseda University (2013) -World e-Government Ranking	Global Ranking: No.8 Asian Ranking: No.4

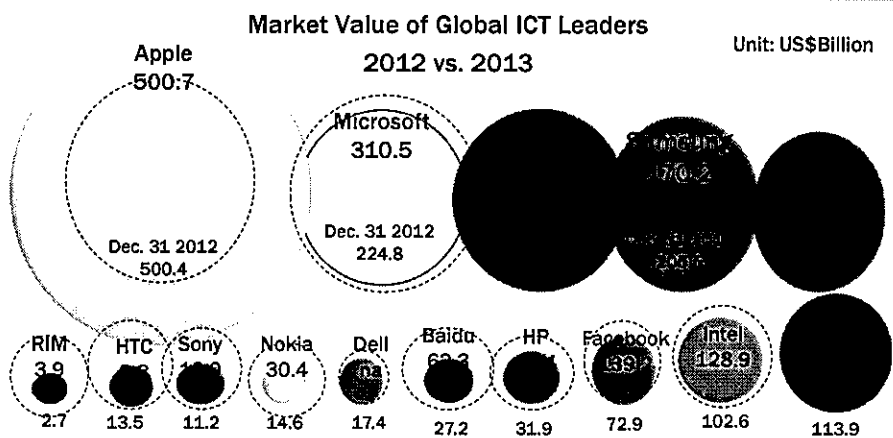
Source: WEF, BERI, IMD, Waseda University, EIU, compiled by MIC/III, June 2014

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II. Challenges

i. Global ICT Leaders' Position Reshuffled



❖ Hardware makers gave way to cloud-based service integrators

Source: MIC, June 2014

ii. Taiwan's Firms Facing Pressures to Move Out

Assembly firms have developed clusters in China

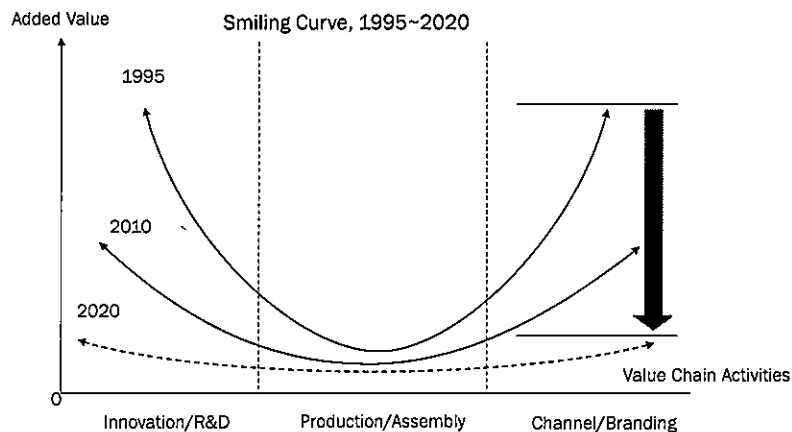
- Most global companies have deepened their deployment in China.
- Taiwanese ICT companies have begun to establish production bases in China since 2000.
- Recently some leading Taiwanese companies have moved their production lines in China further inland.

Key components firms facing pressure to move to China

- In order to better serve customers, Taiwan's ICT components industry have been facing pressure to move to China. For example, most non-prohibited industries like PCBs have moved major operations to China.
- China market accounted for 40% in semiconductor and 20% in panel display market globally. China's government has been encouraging Taiwan's companies to establish production plants in China.

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iii. Smiling Curve is Flattening

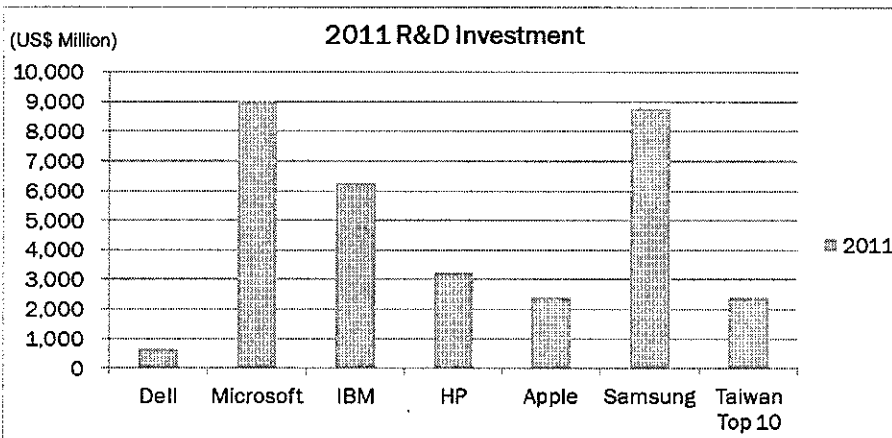


Source: MIC, June 2014

- › With the development of high-tech industry near maturity, the measures adopted by branded vendors in the early years to increase the industry's added-value with innovative activities and channel distribution services has become the thing of past
- › Without any resources or new mindset, it is expected that the added value of the high-tech industry will be hard to reveal and the competition will focus on the scale of resources and the efficiency of operations instead

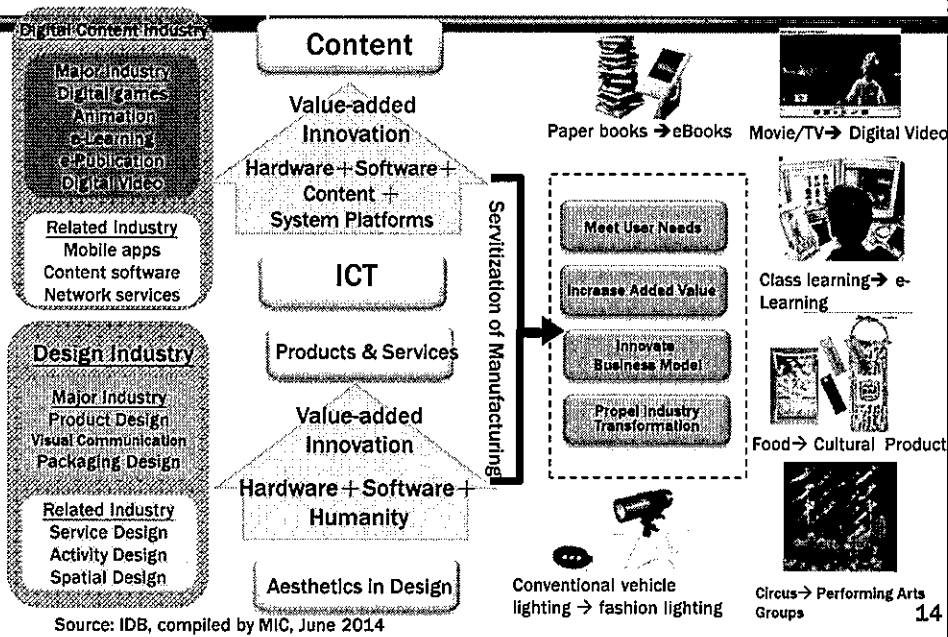
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iv. Insufficient R&D Investment



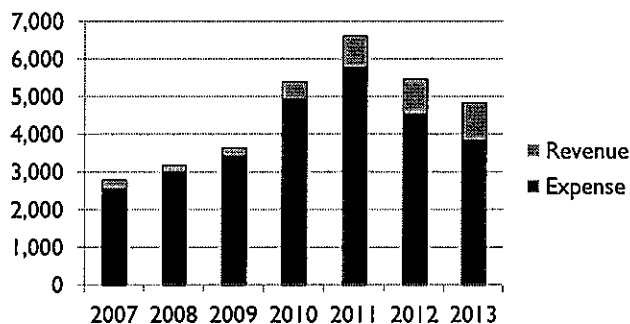
Taiwanese top 10 ICT hardware suppliers include Foxconn, Quanta, ASUS, Compal, HTC, Wistron, Inventec, MSI, Pegatron, and Advantech and their consolidated shipments accounted for around 60% of Taiwan's ICT industry in 2011
 Source: Respective companies, compiled by MIC, June 2014

v. Lack of Capabilities for Cross-Domain Innovation



vi. Lack of Leading-edge Intellectual Property Rights

Taiwanese Firms' Revenue and Expense Recognition for Licensed IPs, 2007 - 2013

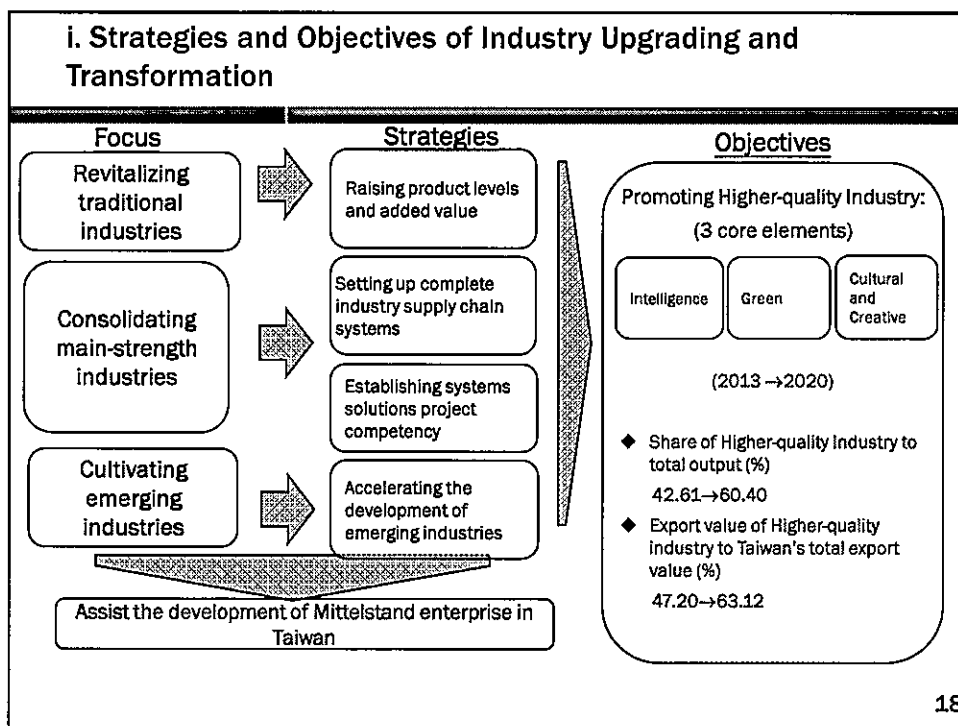
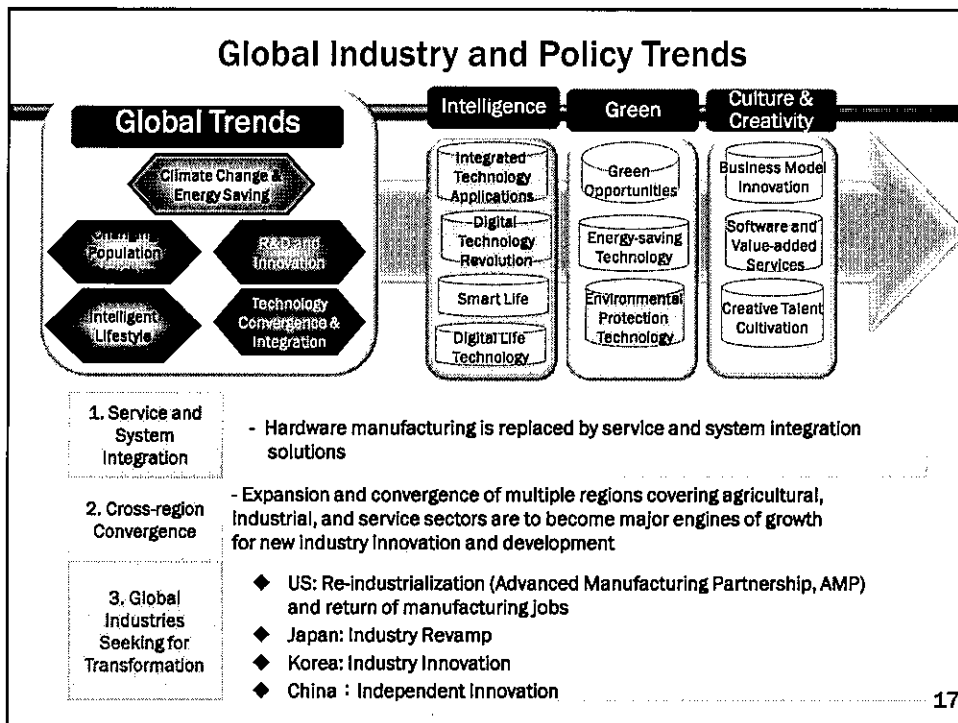


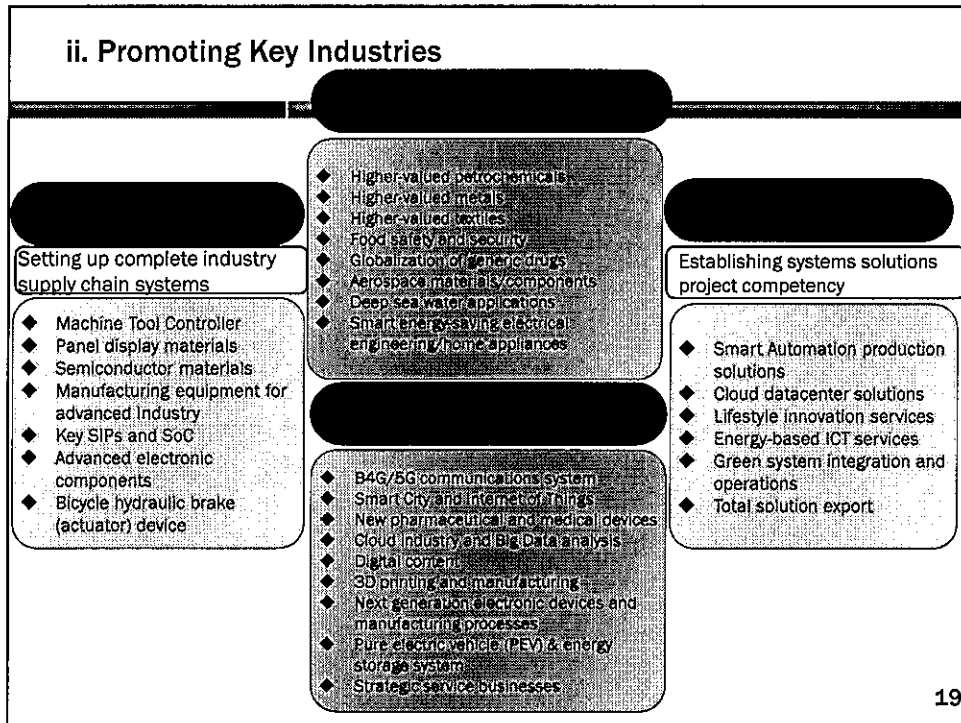
Source: CBC (Central Bank of the Republic of China, Taiwan), compiled by MIC, June 2014

- ❖ According to the USPTO utility patents granted in 2013, the number of Taiwan's utility patent applications filed in the United States grew slightly to 11,598 and ranked the fifth globally; according to the statistics of Taiwan's CBC, Taiwanese firms' revenue and expense recognition for licensed IPs totaled about US\$4.85 billion in 2013, with US\$3.8 billion of expense recognized and US\$1,017 million of revenue recognized
- ❖ Above statistics reflect the fact that although Taiwan holds a significant number of patents but the number of leading-edge patents granted to Taiwanese firms remains low

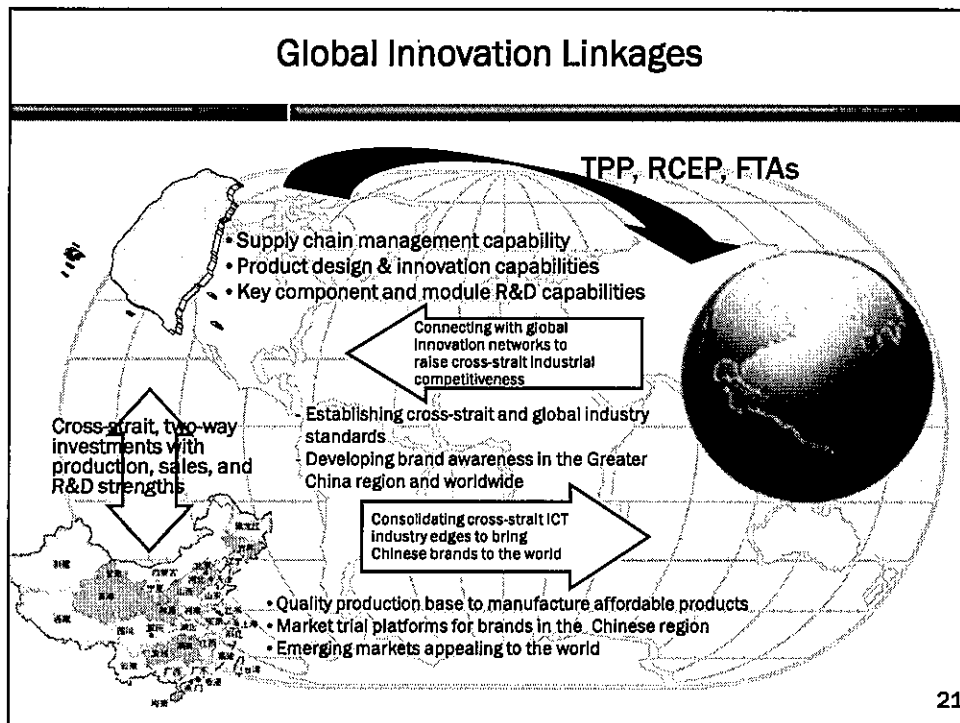
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III. Opportunities





IV. Future Prospects





中華民國經濟部
Ministry of Economic Affairs, R.O.C.

歡慶端午



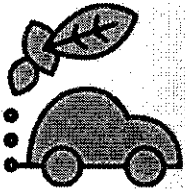
Merci

Thank You

感謝



Electric Vehicle Development & Policy in Taiwan



Automotive Research & Testing Center

Outline

- Overview of Taiwan EV Industry
- EV Policies
- Latest EV Industry Development
- Cooperation Review & Update

Overview of Taiwan EV Industry -Vehicles

- ✓11 car-makers with 25 models passed Taiwanese homologation.
- ✓E-buses join public transportation since 2011.



Overview of Taiwan EV Industry – Components

- ✓Advantages of ICT Industry give a short cut to EV supply chain.

Motor/Power Control

CHROMA → EV controller, Test Solution

RICH Electric → E-Bus Controller

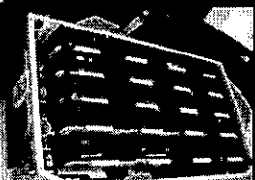
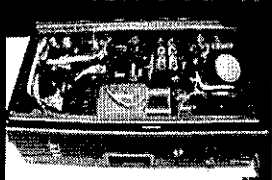
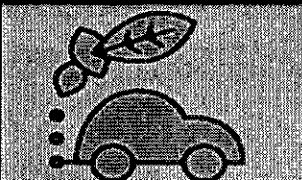

DELTA → On Board Charger, DC/DC

Motor

FUKUTA → Motor for EV

TECO → SUPER-SERVO

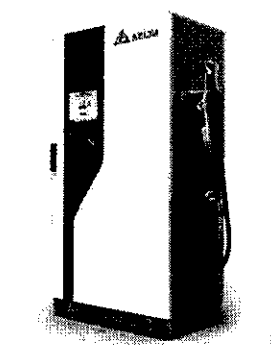
SHIHLIN → Motor for EV controllers

Charging Stations

DELTA

LITEON

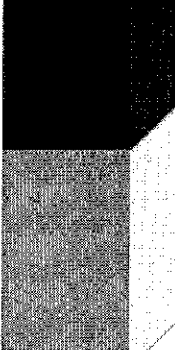


Batteries

Formosa Lithium-Iron Oxide → lithium iron phosphorous oxide cathode material

SMP → Lithium-ion Battery Pack

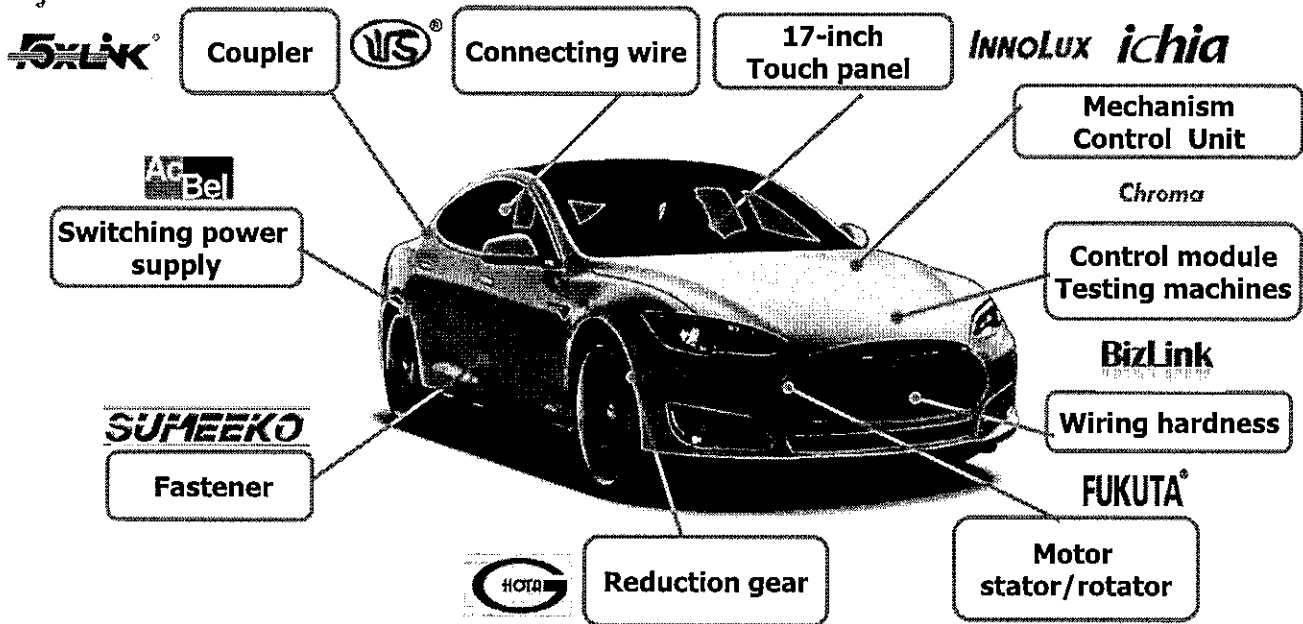
Aleees → LiFePO4 Cathode Material



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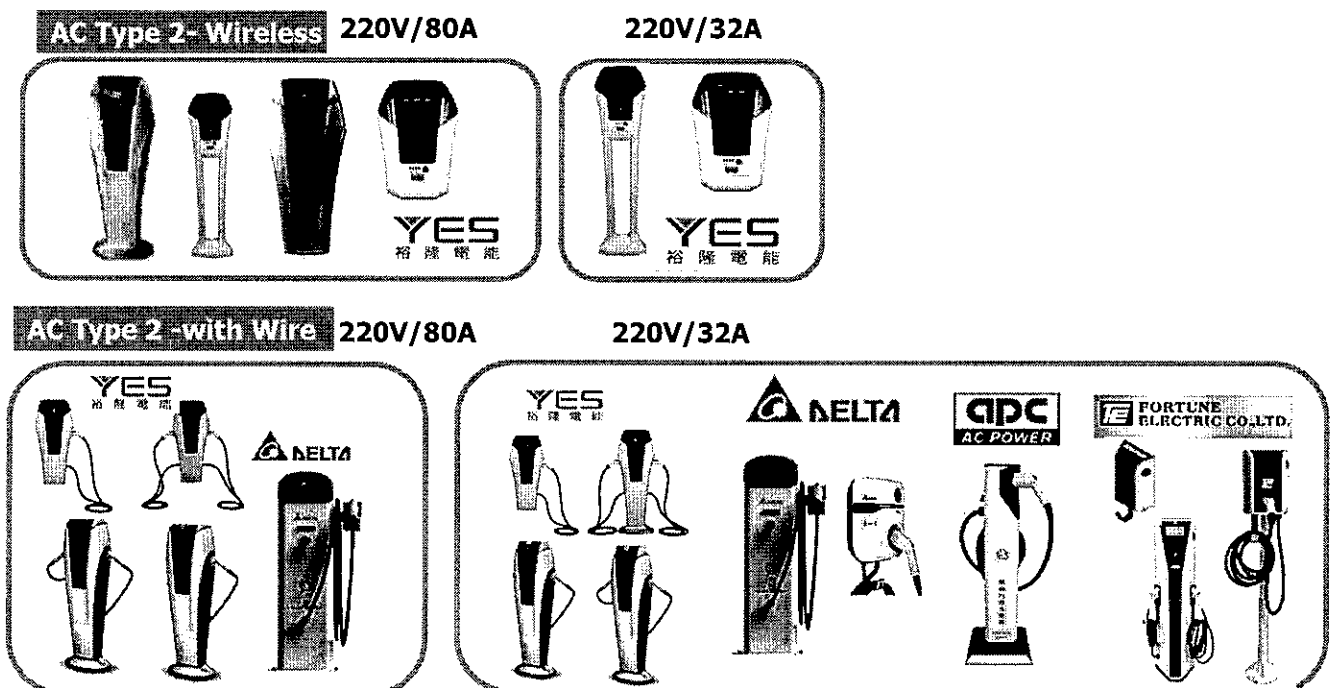
Overview of Taiwan EV Industry-Tesla's Partners

- ✓ 12 Taiwanese companies have entered Tesla's supply Chain system, providing the significant technologies to Tesla.
- ✓ The key components include motor, reduction gears, fasteners, couplers, connecting wires and testing machines.

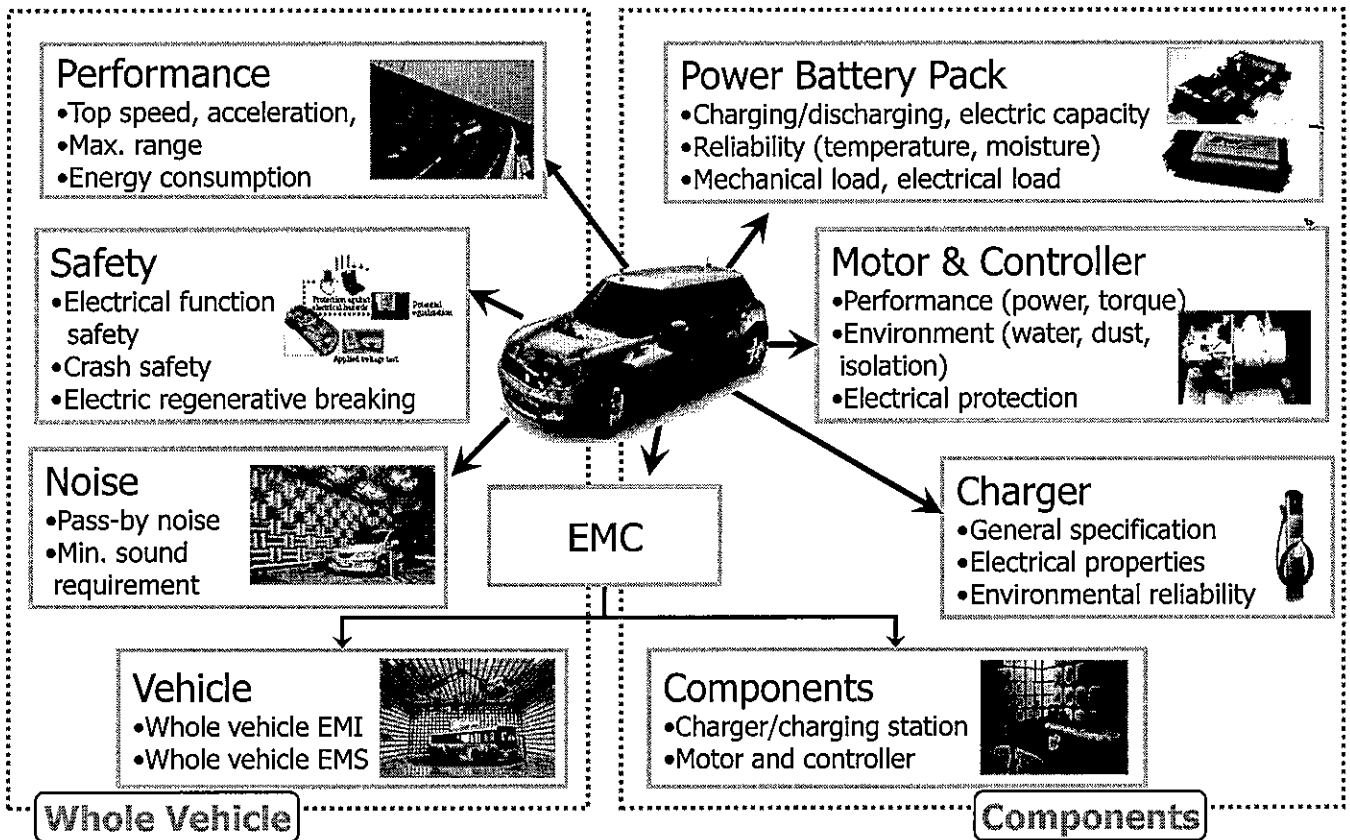


Overview of Taiwan EV Industry-Charging Station

- ✓ AC charging stations from Yulon Energy, Delta, AC Power and Fortune electric have passed the Chinese National Standards (CNS) .
- ✓ Delta has explored Europe & USA markets and extended to the Asean markets recently.



Overview of Taiwan EV Industry-Testing Platform



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Taiwan EV Policies

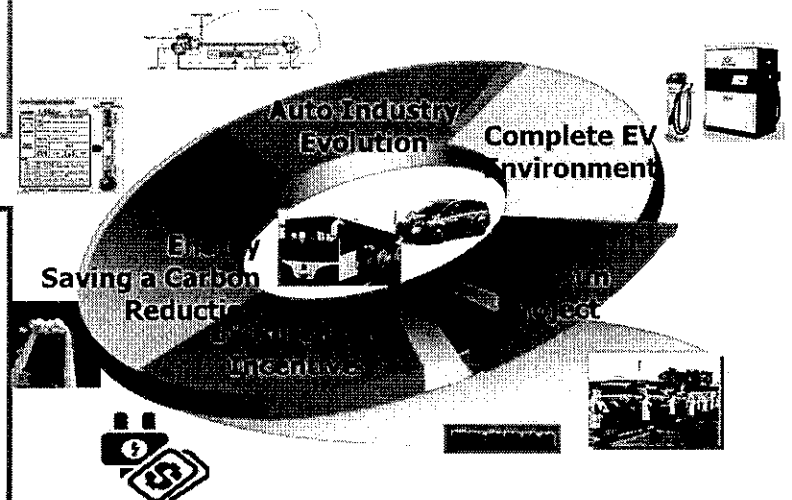
- ✓ Government released EV Development Action Plans in 2010 to speed up the development of EV industry.

Prospect

- ✓ Provide a Low carbon/Green life to citizens
- ✓ Build a sustainable EV Supply Chain
- ✓ Replace public buses with E-bus by 2023

Goal 2016

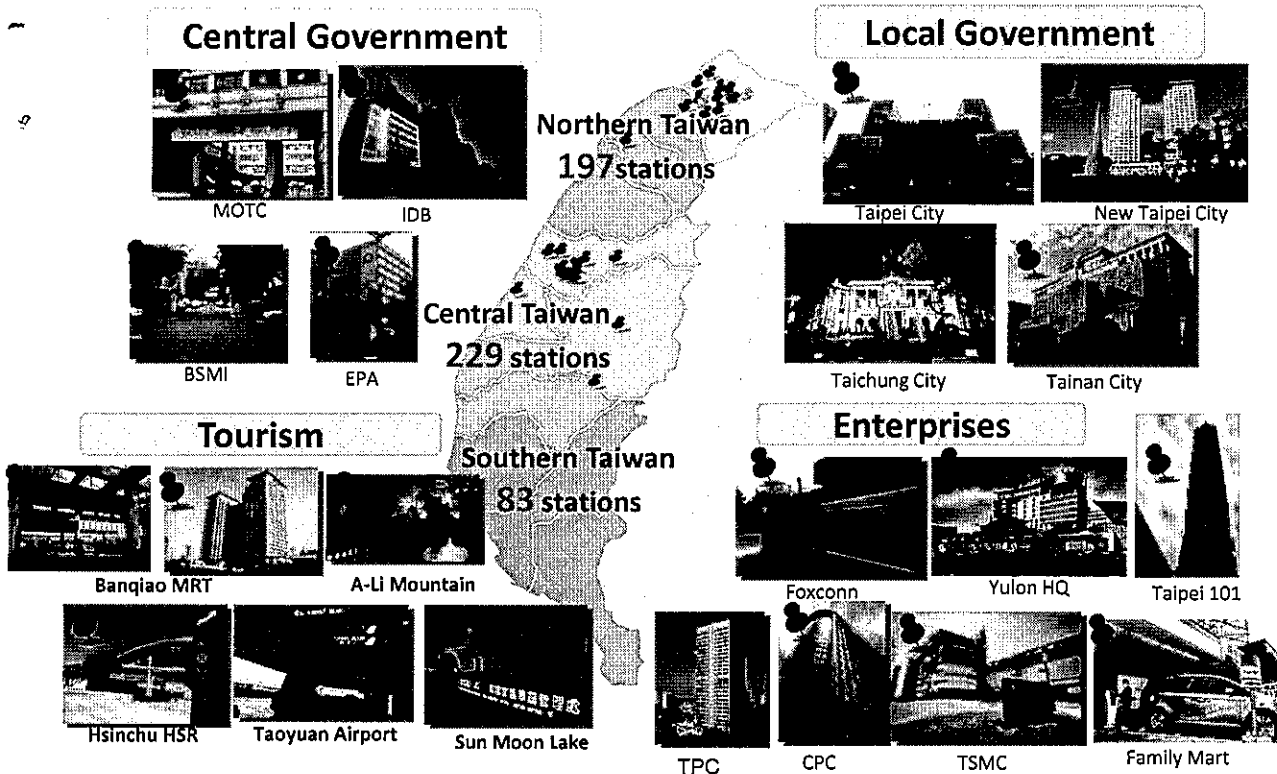
- ✓ Strengthen EV R&D capability through meeting domestic market demands and explore international markets as ultimate goal.
- ✓ Drive industry players to launch EREV & PHEV
- ✓ Support EV component suppliers to enter global supply chain
- ✓ Encourage government-owned business to use EV



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Infrastructure Spreading

- ✓ 509 charging stations have been set up island-wide through pilot run projects and government lead.



Incentive & Tax Exemption

Tax-free on Electric Vehicles

- **Licensing**
Local governments granted Licensing-free from 2012/01~2015/05.
- **Commodity Tax** (Tax on acquisition)
Commodity Tax Exemption for EVs from 2011/01~2016/01.

Engine Capacity	Commodity Tax	
	ICE	EV
Under 2000cc	25%	0%
Over 2001cc	30%	0%

Incentive for EV Users

- Free parking and charging in certain public areas.

Incentive for E-bus by MOTC

- 12m E-bus with new route: subsidizes 80% of body cost (excluding battery); up to US\$125,000
- 12m E-bus with regular route: subsidizes 49% of body cost (excluding battery); up to US\$89,000
- 8m E-bus: up to US\$8,300



Incentive for E-bus by EPA

- Subsidizes Body cost up to US\$16,600
- Subsidizes Battery cost up to US\$33,300

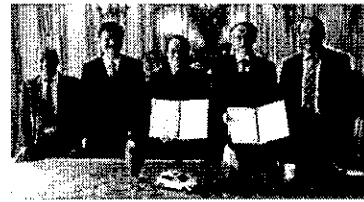


Cooperation Review (1/2)

❖ 2 MOU signed on EV technologies and standards



In 2012, Venturi & Aleees signed a MOU on E-BUS technology & business cooperation



In 2012, Utac & ARTC signed a MOU of EV standards cooperation

❖ 3 partnerships has been built

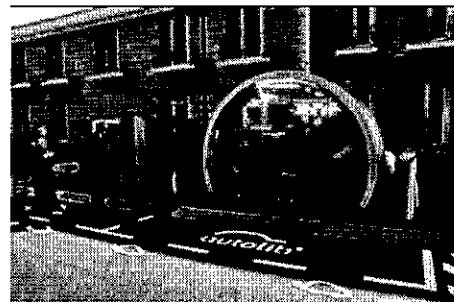
Venturi & EVT : E-scooters for La- poste's bid.

Bolloré & Delta: OEM charging-station.

bathium & Aleees, Tatumg : Lithium iron phosphate cathode Material

Cooperation Review (2/2)

❖ EV Pilot Run experience sharing



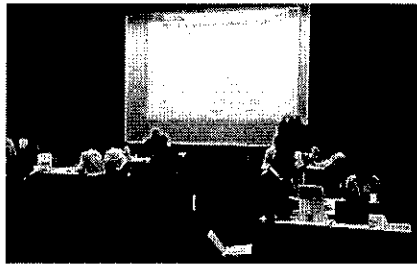
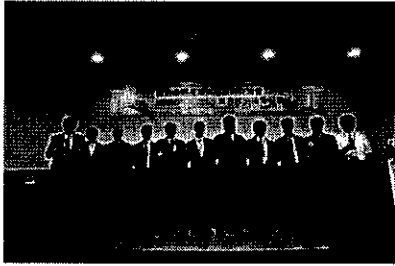
✓ Taiwan EV delegation visited Paris's Autolib & Nice's Autobelue pilot-run projects in 2012 to experience different business models.



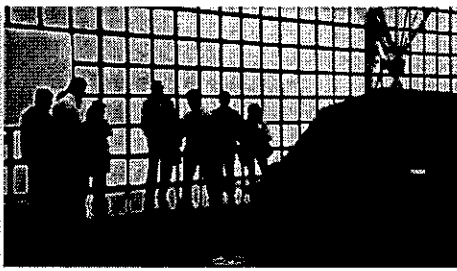
✓ Autolib's leader-Mr. Didier visited Taipei's pilot-run project and Yulon Group's control center to explore business opportunities in July 2012.

Cooperation Update

- ❖ France EV cluster Signed a MOU with TARC on EV key components technology in June 2013.



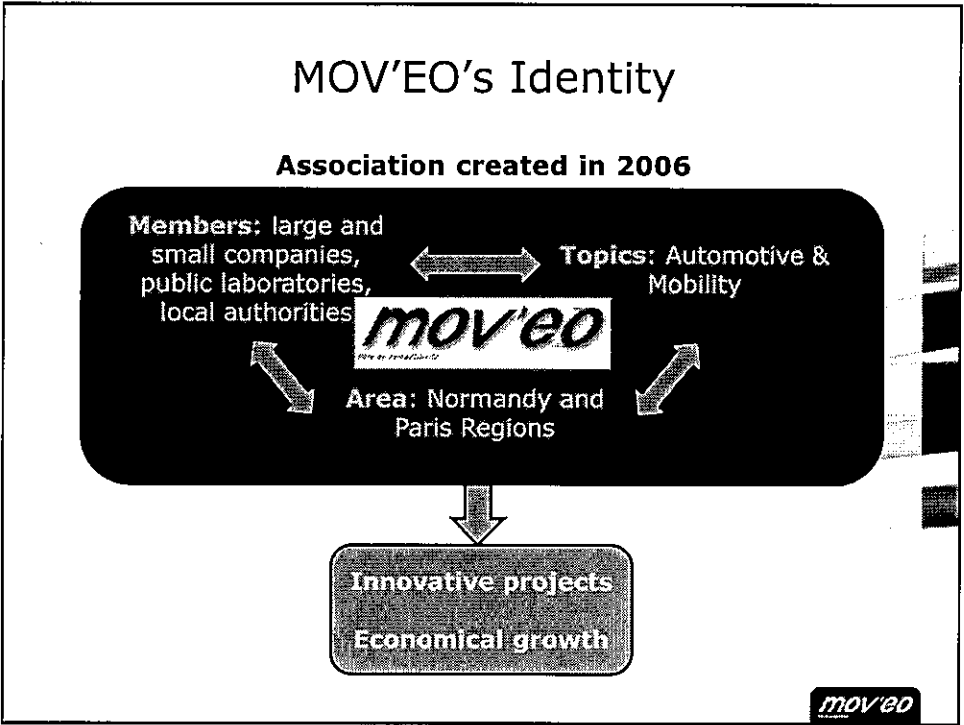
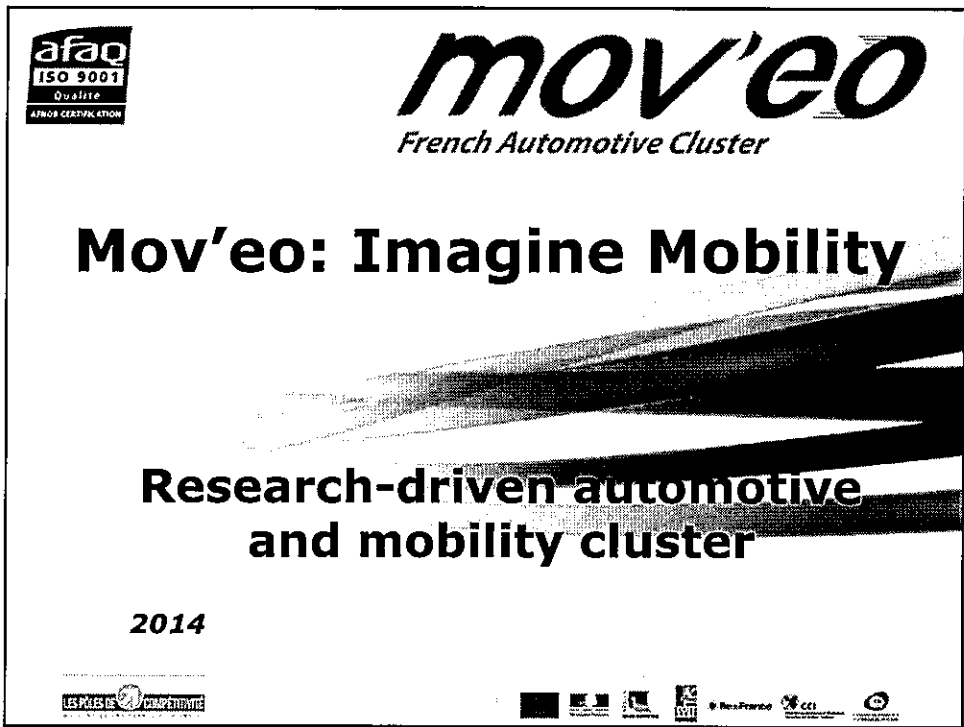
- ❖ ARTC & UTAC signed a second MOU on Homologation Service in 2014.



- ❖ Bollore Group –**Blue Solution** visited Taiwan central/local governments to seek potential opportunity of launching its car-sharing service in Taiwan in February 2014.

Thank You!

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Competitiveness clusters in France

COMPETITIVENESS CLUSTERS STRATEGY

- **Develop** partnerships between the various stakeholders based on their complementary skills
- **Construct** shared strategic R&D projects that can benefit from public funding
- **Promote** an overall environment favorable to innovation



mov'eo

MOV'EO's stakeholders

343 members

- SMEs (54%)
- Large Companies (22%)
- Research Institutes (20%)
- Public Authorities, local to national (4%)

mov'eo

Some of our members



Industrials

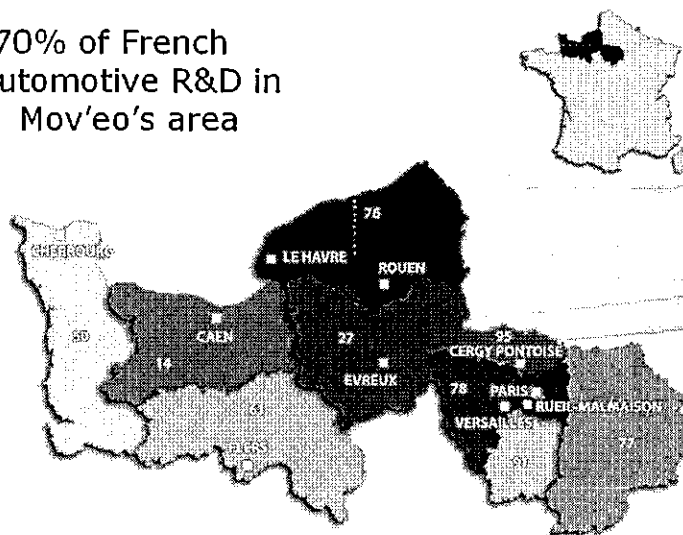


Academics and Public research



Mov'eo's Area

70% of French Automotive R&D in Mov'eo's area








6 fields of strategic activities

- Intelligent Mobility Solutions
- Road Users Safety
- Demonstration and Energy Storage
- Vehicles Environmental Footprint
- Mechatronics Systems
- ICE Powertrains




4 cross-cutting action plans

- **Mov'eo-SME's:** To offer exclusive services to our SME's and help them in their R&D development
- **Mov'eo-International:** To develop international relations, built R&D partnerships and promote the cluster
- **Mov'eo-Competitive Intelligence:** To assist our members in their IP and technology scouting
- **Mov'eo-Competences:** To attract students and anticipate the needs of skills

Collaborative R&D Projects

326 R&D projects certified by Mov'eo since June 2006

- Overall budget = 1 397 M€

167 R&D projects currently financed

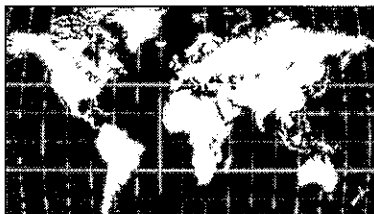
- Overall budget = 876 M€
- Public funding = 362 M€ (Government & local authorities)
- More than 240 SMEs involved

The Mov'eo logo is located in the bottom right corner of the slide. It consists of the word "mov'eo" in a lowercase, sans-serif font, with a stylized apostrophe. The logo is set against a dark rectangular background.

Mov'eo's International Strategy

As part of the Treaty of Lisbon and in consistence with our
6 fields of strategic activities:

1. Develop relations with other European clusters and initiating technological partnerships
2. Promote Mov'eo's skills and participating to international missions
3. Support our SMEs and laboratories in their international development
4. Participate to events initiated by our partners

The Mov'eo logo is located in the bottom right corner of the slide. It consists of the word "mov'eo" in a lowercase, sans-serif font, with a stylized apostrophe. The logo is set against a dark rectangular background.

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Qualité
AFNOR CERTIFICATION

Des automobiles & moyens de transports avancés
sûrs pour l'Homme et son environnement

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Thank you for your attention
QUESTIONS / ANSWERS

LES PÔLES DE COMPÉTITIVITÉ
Région Île-de-France
CCI
CMAA

WINDPOWER INDUSTRIAL COOPERATION

The 21st Industrial Cooperation Consultation Meeting
Paris - Jun 12, 2014

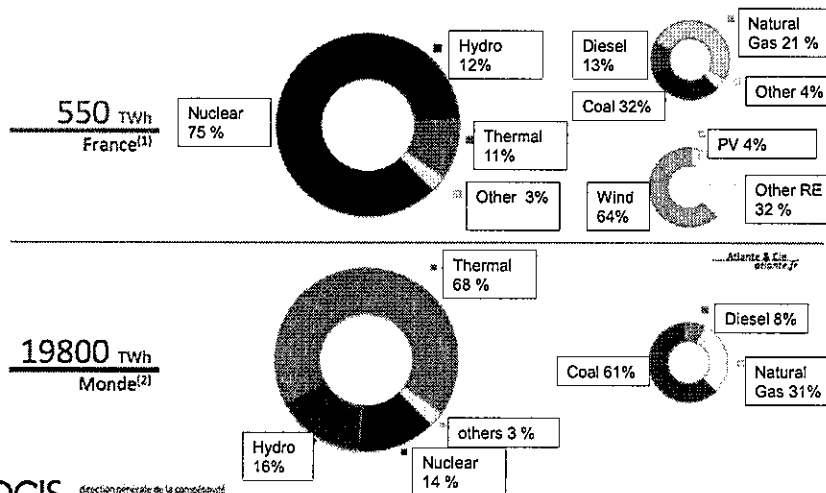
Nicolas d'ARCO

General Directorate for Competitiveness, Industry and Services
Ministry for the Economy, Industrial Renewal and Digital Affairs



direction générale de la compétitivité
de l'industrie et des services

Electricity mix in France is atypical and at the heart of political debate



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de l'industrie et des services

Electricity mix in France is atypical and at the heart of political debate

- France is committed to meet in 2020 the European target of 20% renewable energy, 20% decrease in Primary energy; 20% decrease in CO2 emissions compared to 1990.
- This objective is set at 27% for renewable energy in the French electricity mix.
- Discussion at European level are currently taking place to set ambitious targets for 2030.
- In the meantime, French Government is currently finalizing a project for a Framework Law on the Energy Transition that sets specific goals and governance of the energy policy in France.
- One of the main goal of the energy policy will be underlined: promoting, through the development of industry, the emergence of a low-carbon, competitive and job-rich economy.

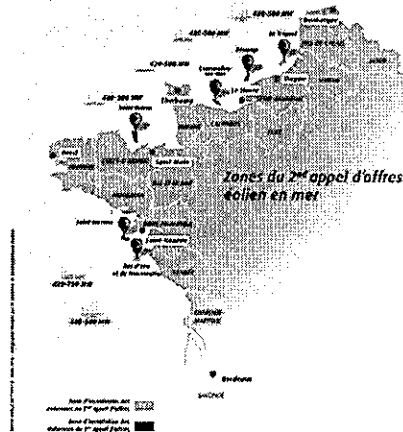
WIND ENERGY: STATE OF PROGRESS & OUTLOOK

- Wind energy will be the biggest contributor of the renewable electricity growth.

		2012	2020 objective
Installed power (GW)	onshore	7,2	19
	offshore	0	6
Number of companies		180	<i>n.c.</i>
Number of jobs		11 000	60 000

FRANCE SUPPORTS WINDPOWER ENERGY

- Feed-in Tariff for onshore wind power.
- Launch in 2011 and 2013 of two calls for tenders on offshore wind (around 600 turbines to be installed on the French coasts), allowing the right to exploit and to contract electricity sales based on feed-in tariff.



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FRANCE SUPPORTS THE DEVELOPMENT OF THE FRENCH INDUSTRIAL WINDPOWER SECTOR

- Strong support to Research, development and innovation in the Investments for the Future Framework : more than 1 billion euros for demonstrators for renewable energy with a specific focus on wind and ocean power.
- Wind power is identified as priority in one of the France's 34 Industrial Plans and in the roadmaps of several competitiveness clusters: both initiatives are supported with specific funds.
- France supports the access to European Programs (e.g. 400 M€ per year to support low-carbon energy R&D in H2020).
- Governmental support for the structural development of the French windpower industry: Windustry 2.0 project aims at helping manufacturing companies willing to diversify their activities into windpower.

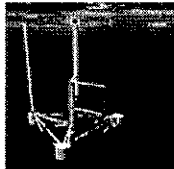
dgcis direction générale de la compétitivité de l'industrie et des services

A specific glance at offshore wind power: two opportunities for collaboration

- Two international energy companies are setting up production capacities for offshore wind farms in France (Alstom, Areva) with two different technologies ready for deployment (6 MW and 5MW moving to 8 MW), which are supposed to dominate the market in, the future.
- French Government supports both alternatives, each of them structuring a whole chain of contractors and suppliers (150 companies) and planning to deploy 1,5 GW by 2020. About 10 G€ investments are planned to support this development and will create 10,000 jobs.
- Both companies and their supply chain are ready for international partnership, help develop supply chains and export their technology and know-how.

A specific glance at offshore wind power: two opportunities for collaboration

- Mounted offshore wind power will quickly reach its limit: about 60% of the European Wind offshore energy resources will need floating wind turbines.
- Through French (Investments for the Future) and European (NER300) supports, French Industry is leading the development of this technology with 2 main demonstrator projects (about 200M€):
 - Vertiwind, lead by Technip (with Nenuphar, Areva, and EDF R&D)
 - Windflo, lead by Nass&Wind Industry (with DCNS and Alstom)



A specific glance at offshore wind power: two opportunities for collaboration

- **Development is in its final phase with demonstrator engaged or soon to be engaged.**
- **Two technologies are being developed, for precommercial projects before 2020 and commercial projects in the next decade.**
- **Industrial companies will soon be looking for international partners to build consortia to develop deep sea offshore resources wherever needed.**

THANK YOU



Taiwan-France Wind Power Industrial Collaboration

Metal and Mechanical Industries Division

06/12/2014

1/8



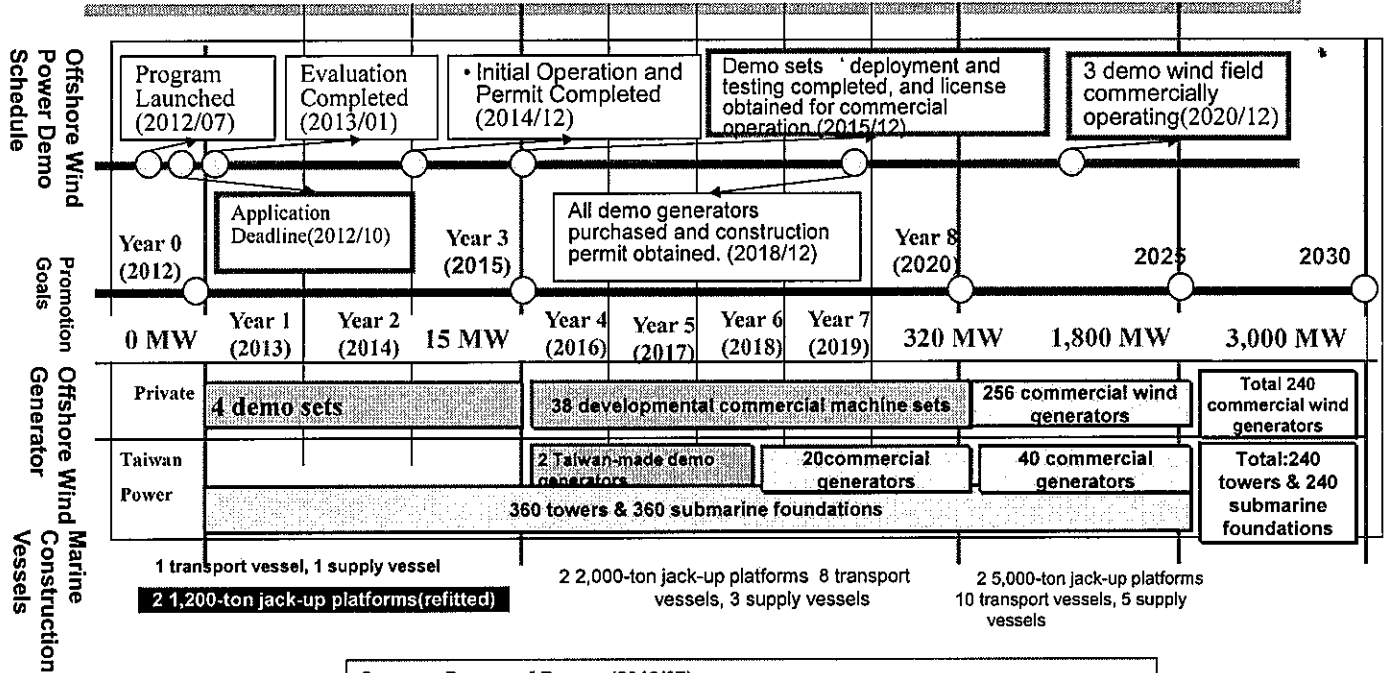
Content

- 1. Current Promotion of Policy Programs**
- 2. Current State of Industry**
- 3. Visions, Goals, and Planning of Industrial Promotion**
- 4. Future Promotion Collaboration Methods**

2/8

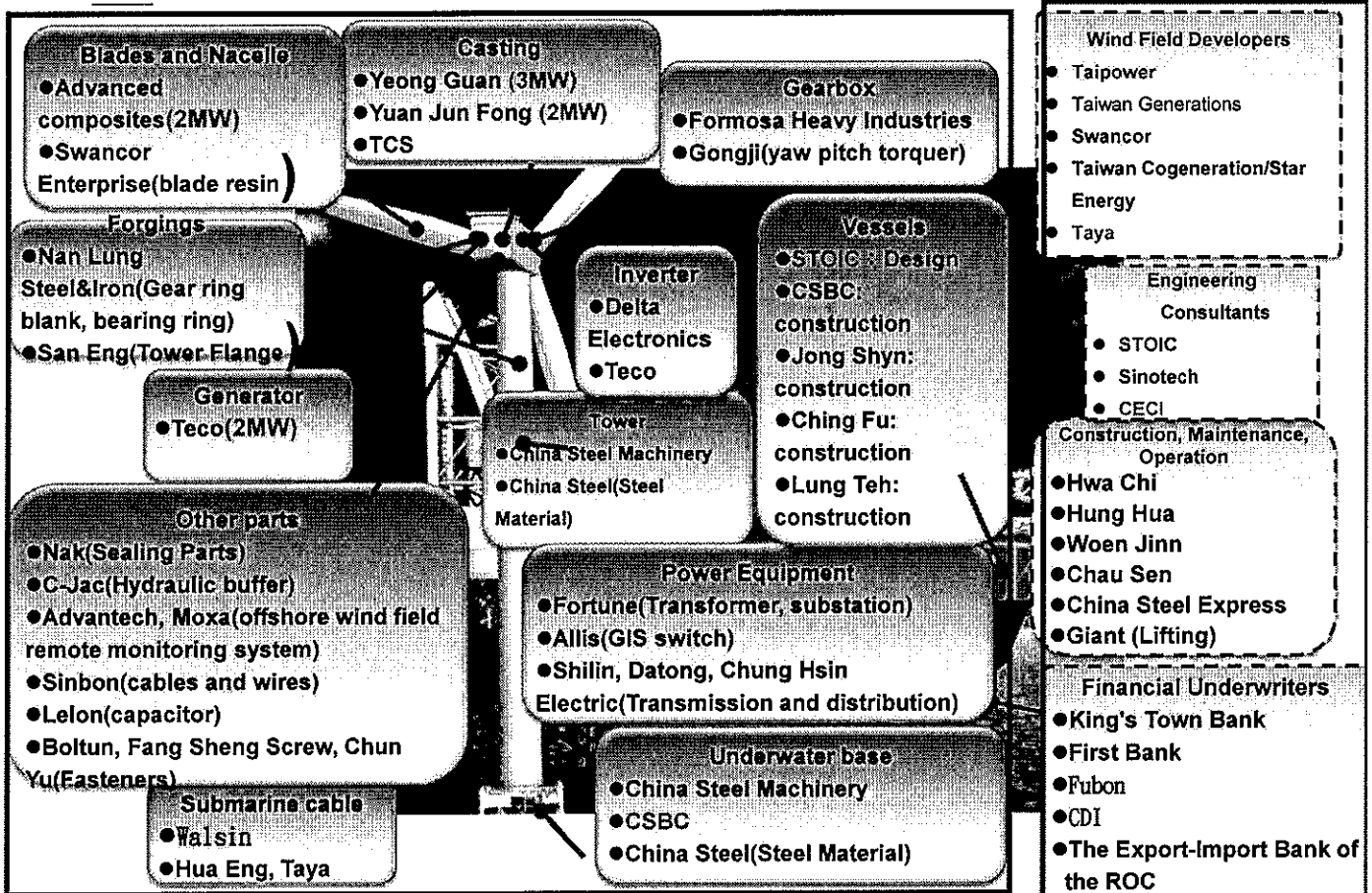
1. Current Promotion of Policy Programs

- Bureau of Energy Offshore Wind Power Demonstration Incentives and Promotion Schedule
 - Rewarding 2 demo wind field application cases from the private sector, totaling 4 demo machine sets.
 - Rewarding 1 demo wind field application cases from a state-owned enterprise, totaling 2 demo machine sets.
 - A total of 6 demo machine sets shall be completed before 2015. However, state-owned enterprises need to raise the proportion of localization and may submit to extend the work schedule, but it must not go beyond 2020.



Source : Bureau of Energy (2012/07)
Compiled by : MIRD (2012/11)

2. Current State of Industry





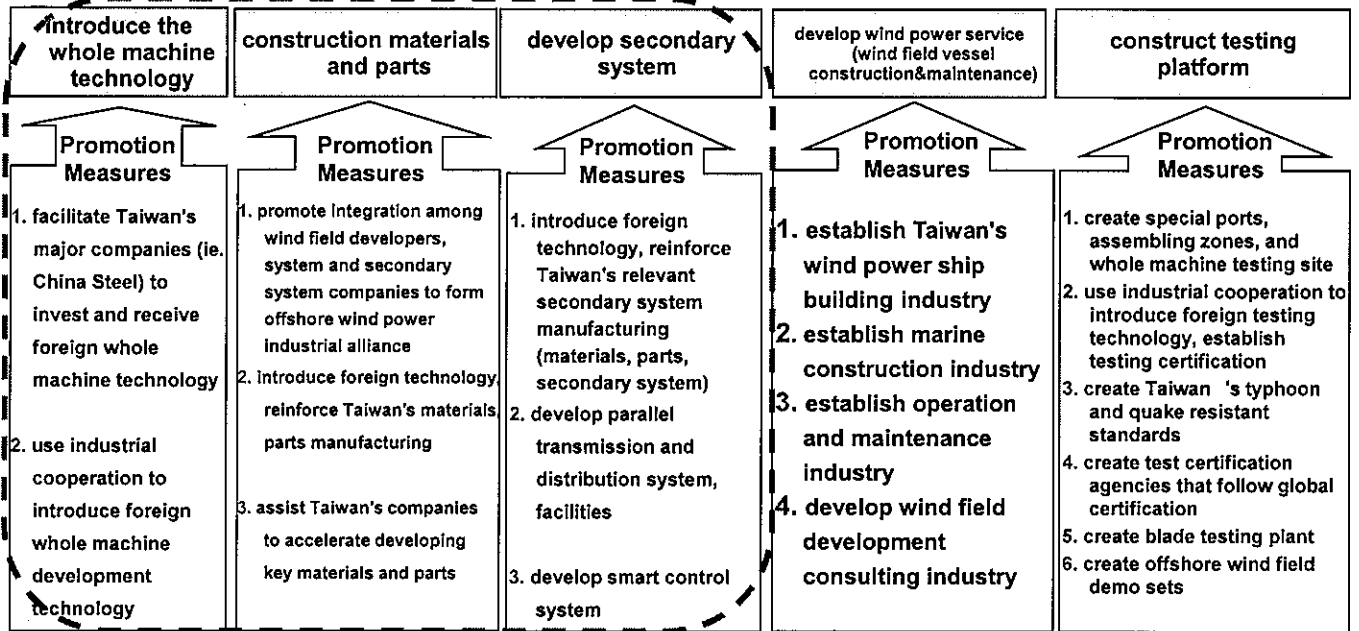
3. Visions, Goals, and Planning of Industrial Promotion

Visions

- Mid-term: establish Taiwan's offshore wind power industrial chain
- Long-term: based in Taiwan, linking Pacific Asia, deploying the globe

Development Goals	2020	2030
Industrial Total Output	71.5 billion	700 billion
Increase Jobs	4,640	19,240
Investment	60 billion	480 billion

Promotion Policy



Currently Planned Collaboration Direction

5/8



3. Visions, Goals, and Planning of Industrial Promotion (Continued)

- Taiwan's Offshore Wind Generator Industrial Bottleneck
 - Taiwan has never had the leadership from offshore wind generator system company.
 - Currently, the whole machine technology is 2MW land-based wind generator system which is far off the 5MW offshore wind generator system around the world.

- Taiwan's Offshore Wind Power Industrial Development Planning

- Offer offshore wind power demonstration incentive and raise localization proportion of demo sets.
- Facilitate Taiwan's major companies to invest and use industrial collaboration to introduce foreign whole machine developing technology
- Reinforce Taiwan's related secondary system industrial manufacturing to achieve the goal of basing in Taiwan, linking Pacific Asia, and deploying globally.
- Currently planning to negotiate with French AREVA on technical transfer of offshore wind generator.

6/8



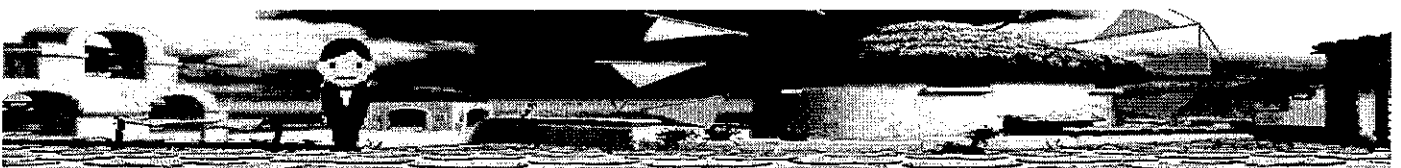
4. Future Promotion Collaboration Methods

- **Current Promotion State**
- **Because AREVA feels Taiwan offshore wind power market is important, under IDB's arrangement, both AREVA and related Taiwanese companies have expressed willingness to collaborate.**
- **At the end of March in 2014, China Steel Company (CSC)has proposed the technology transfer requirement to AREVA.**
- **Future Collaboration Planning with AREVA**
- **Before the end of June 2014, we expect to confirm the technology transfer partner, before the end of September to complete the technology transfer contract negotiation details.**

7/8



***Thanks for your
attention !***



8/8

Smart grid/smart city cooperation

The 21st Industrial Cooperation Consultation Meeting
Paris - Jun 12, 2014

Nicolas d'ARCO

General Directorate for Competitiveness, Industry and Services
Ministry for the Economy, Industrial Renewal and Digital Affairs



direction générale de la compétitivité
de l'industrie et des services

European vision of a Smart community

- **Integrated Infrastructures and processes across Energy, ICT and Transports** – connecting infrastructure assets to improve the efficiency and sustainability of cities
- **Sustainable Urban Mobility** – alternative energies, public transport, efficient logistics, planning
- **Sustainable Districts and built Environment** – improving the energy efficiency of buildings and districts, increasing the share of renewable energy sources used and the liveability of communities

	Sustainable Urban Mobility	Sustainable Districts & Built Environment	Integrated Infrastructure & Processes
Decisions	Citizen Focus	how we include citizens into the process as an integral actor for transformation	
	Policy & Regulation	creating the enabling environment to accelerate improvement	
	Integrated Planning	how we work across sector and administrative boundaries, and manage temporal goals	
Insight	Knowledge Sharing	how we accelerate the quality sharing of experience to build capacity to innovate and deliver	
	Metrics & Indicators	enabling cities to demonstrate performance gains in a comparable manner	
	Open Data	understand how to exploit the growing pools of data, making it accessible - yet respecting privacy	
Enablers	Standards	providing the framework for consistency, commonality and repeatability, without stifling innovation	
	Business Models, Procurement & Funding	enabling local solutions to compete in a global market	



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Implementation of our vision

FP7 & HORIZON 2020: Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse projects

Start date (H2020): 2014
End date: 2015

Total budget: 200M€
Indicative project size: 20M€

Remark: realization in 2-3 communities ; must involve 3 follower cities ; project lead by industrials

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Eco-city Program:

Start date: 2010
End date: 2014



Total budget: €750M
Number of projects: 19
Remark: integration of energy, transport, ICT sectors and urban development ; projects lead by communities

Smart grids Action:

Start date: 2010
End date: 2015

Total budget: €165M
Indicative project size: 20M€
Remark: focus on energy, projects lead by industrials

Implementation of our vision

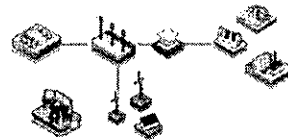
- **French smart city and smart grids know-how are federated through complementary initiatives:**
 - Smart Grid France is an association of 10 competitiveness clusters which gathers enterprises and public laboratories from different sectors: energy, city, and numeric. It mainly supports SME development.
 - The Industrial Plan "Smart grid" has built a roadmap which is now being implemented and will be supported by the public sector.
 - VIVAPOLIS is an umbrella brand that brings together French stakeholders - both public and private - seeking to promote a shared ambition for sustainable urban development at international level.
 - 35 million of Smart meters (Linky, G3 PLC) will be deployed by 2020, generating new businesses and services.
- **More than 300 demonstrators and commercial projects have been or are realized in France and abroad, especially in Asia (China, Japan, Hong-Kong)**

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Implementation of our vision: Smart Grid Vendée

SYDEV, ERDF, RTE, ACTILITY, ALSTOM GRID, COFELY
INEO, LEGRAND, CNAM

Duration : 5 years
Total cost : 28 M€
Public from Investments for the Future : 9,5 M€
Location : Vendée department



Aims at experimenting new concepts enabling flexibilities valorization (production & consumption) for Vendée department

• This large scale project – covering 6 wind farms, 36 PV installations, 100 public buildings, 10,000 lights, 1 industrial site and 6 sub-stations – is based on :

- Implementation of remote sensors in 100 public buildings (town halls, swimming pools, schools, etc.) to strengthen the intelligence and responsiveness of the grid and to help control energy demand
- Development of innovative software solutions for simulation and forecasting of the status of the grid, and of consumption and production
- Deployment of network automation to dynamically manage production from renewable sources
- Creation of tools for decision support and active management of consumption and production.

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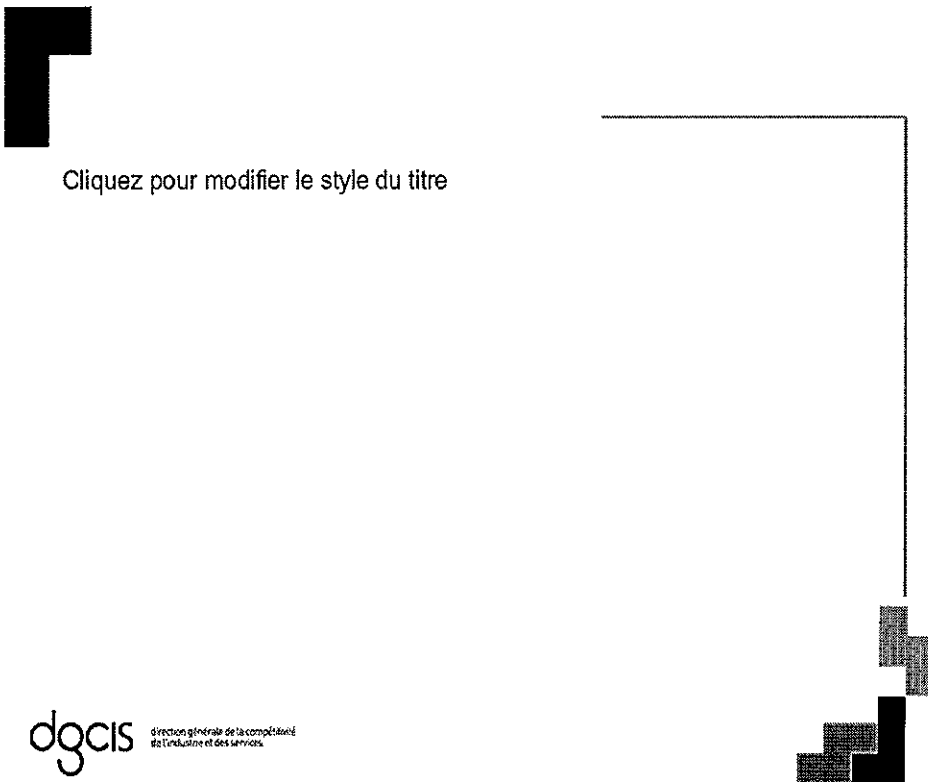
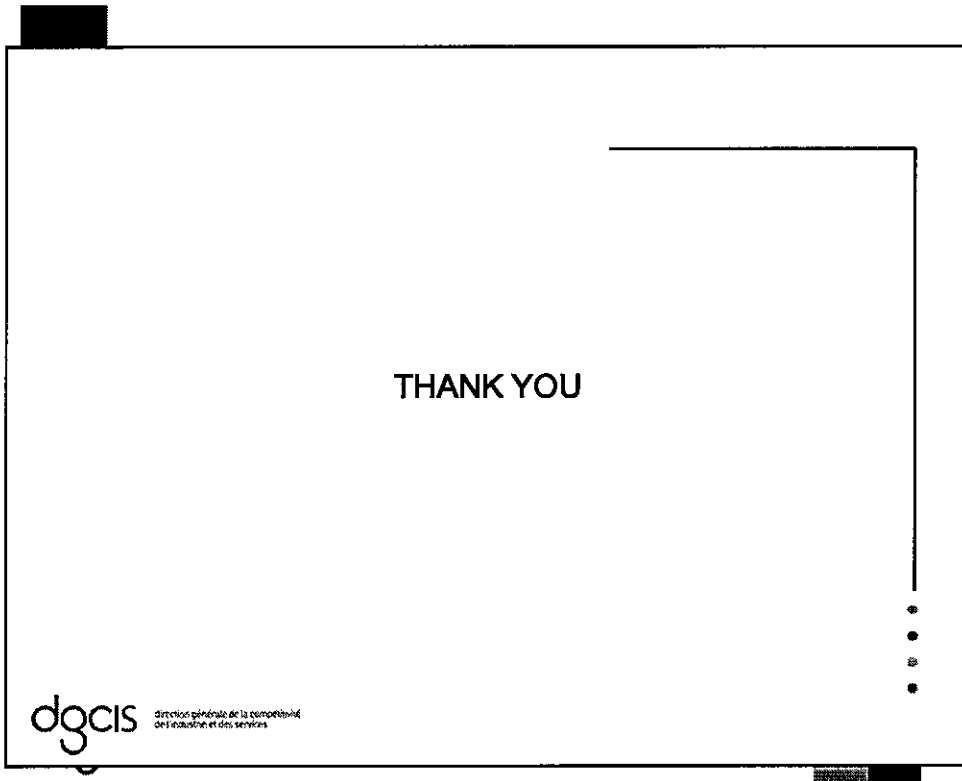
direction générale de la compétitivité
de l'industrie et des services

How to cooperate together

- **Technical R&D projects and demonstrators are giving way to commercial deployment.**
- **A large deployment in a large area is planned in France in the “Smart Grids” Industrial Plan roadmap.**
- **French industries are now looking for partners to share their know-how and adapt it to local context.**
- **Thus, the “Smart grids” Industrial Plan plans to implement two majors actions with international partners:**
 - Set a “road of expertise” that will present to foreign visitors the most relevant know-how of the French Industry corresponding to their needs for commercial or research cooperation
 - Implement a demonstrator abroad with a new strategic partner, that could lead to commercial partnership to jointly export the developed solutions in third-countries.

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de l'industrie et des services



Smart Energy and Smart City Collaboration Opportunities

Dr. Ming-Whei Feng
Smart Network System Institute
Institute for Information Industry
June 12th, 2014



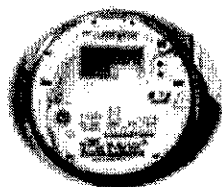
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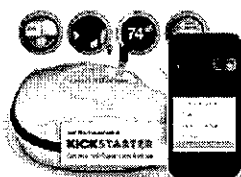
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Internet of things (IoT) Plays Essential Roles in Future Energy Services and Smart Cities

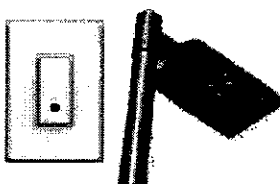
15 Billions or 1 Trillion things connected by 2020



- Not primarily controlled by humans
- Unique IP address
- Permanent connection to Internet
- Examples: Smart meter



- Act as gateways or aggregators
- Unique IP address
- Permanent connection to Internet
- Examples: Smart hub



- No direct connection to Internet
- No unique IP address
- Access through gateway
- Examples: Connected lights (mesh network)

...and everyone (and their devices) can be connected to
everyone else (and their devices)

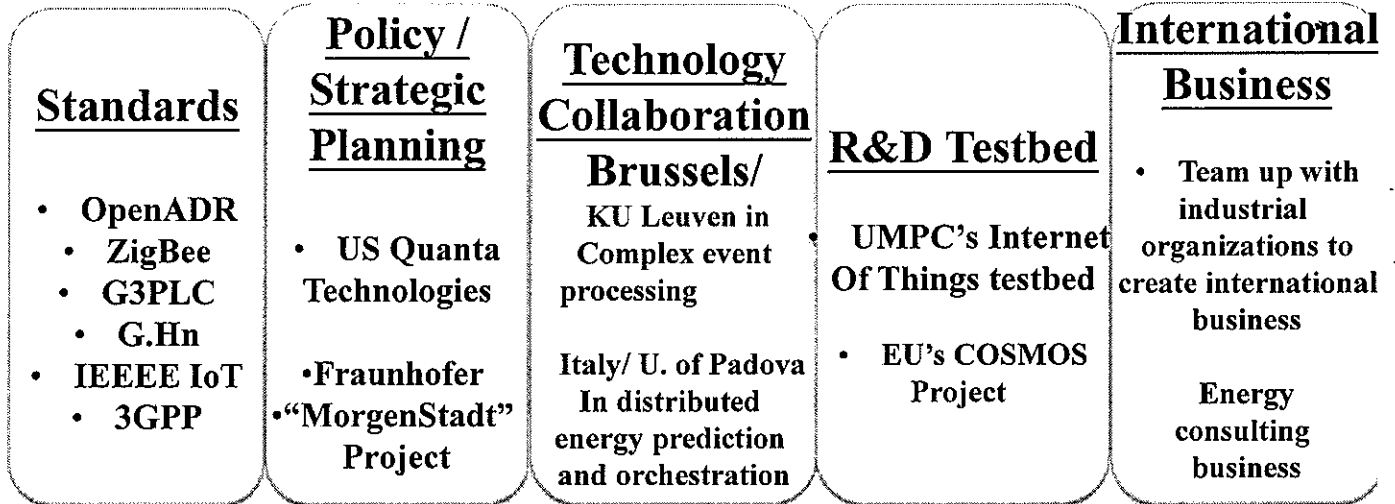


2

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IoT/Smarter Energy/ Smart City: No borders

• In-Depth International Collaboration



Speed up the R&D and Business Relationships



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Smart Energy and Smart City Solutions in III



Smart Transportation & Big Data

Part of Smart City demonstration in Taipei. Worked with government sectors, municipal buses and private taxi fleet for data collection and big data analysis

GNSS Fast Cold Start

A quality patent for challenges GPS technology currently is facing

AMI System

Solid experiences in low-voltage & high-voltage AMI systems

Metal-Friendly RFID

Overcame reading difficulties on metallic objects over conventional RFID

Energy Management on Cloud

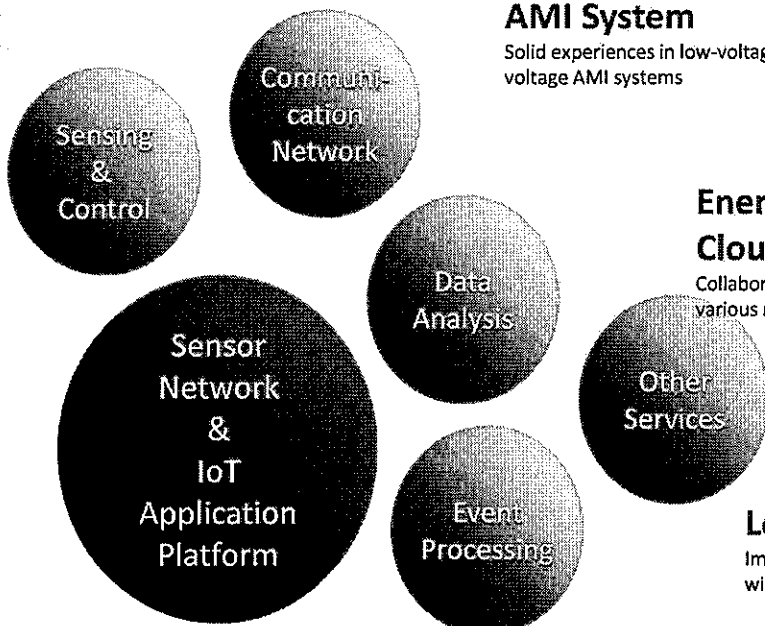
Collaborated with Powertech Industrial; Propagate to various retail & manufacturers

Wireless Broadband

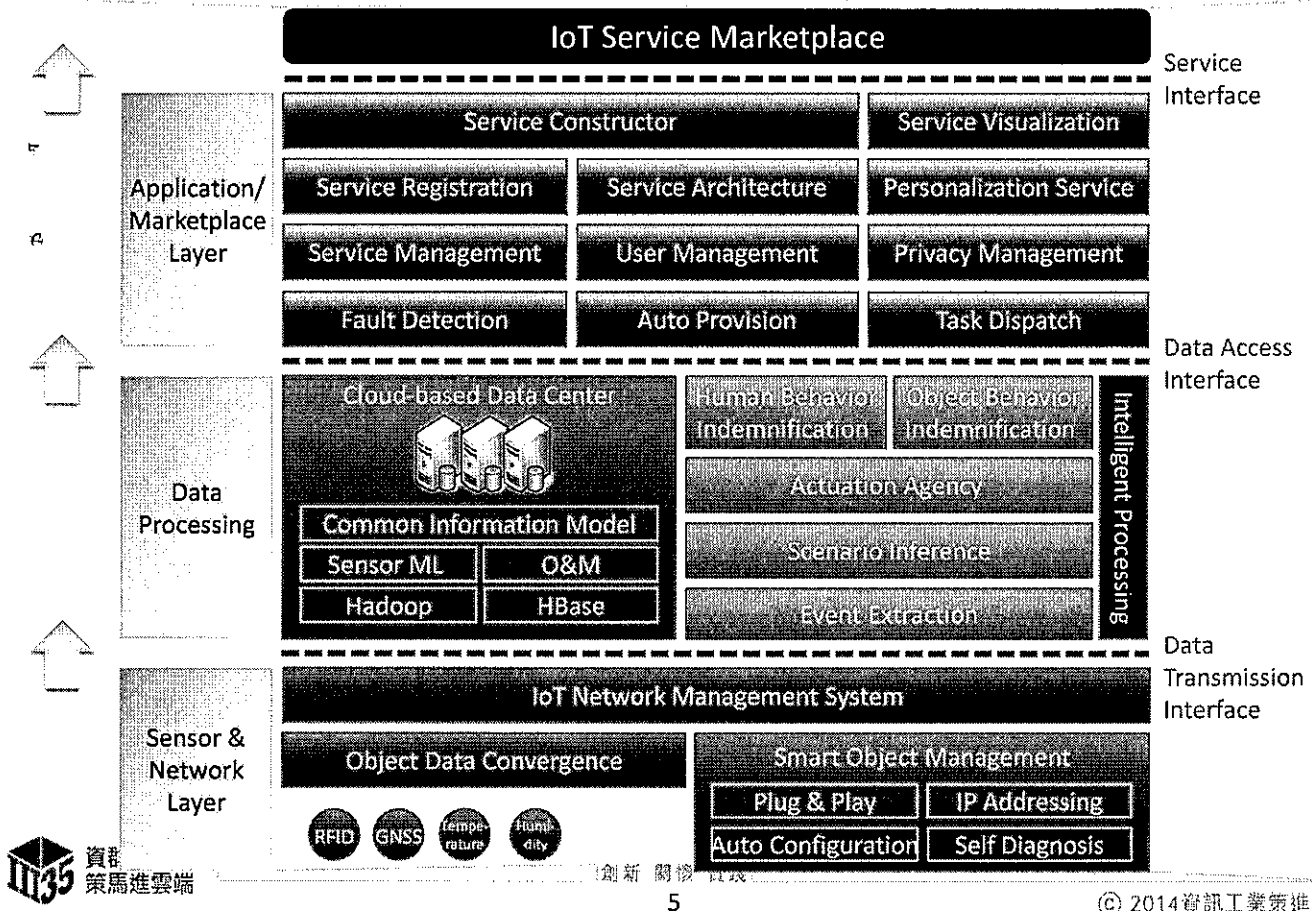
Enable video-based surveillance services via wireless network; Work with police patrol/ dispatch system

Low Cost Wireless Network

Implemented in Port of Taipei; truck positioning & dispatching; wireless ZigBee network



III's IoT / Smart City Solution Architecture



III's AMI Solution

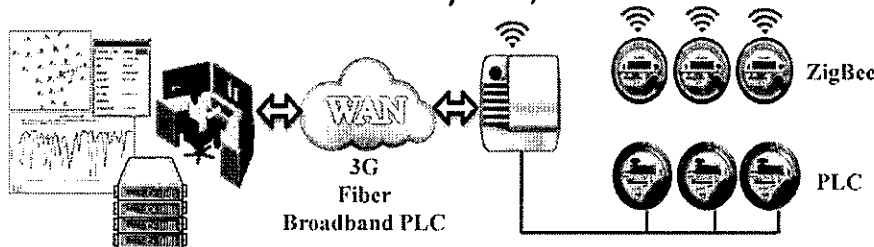
The Advanced Metering Infrastructure

What

- Leading in development of meter reading & communication stack
- Hybrid sensor network technologies suitable for urban settings
- Developed 1st high-voltage and low-voltage AMI
- Provide turn-key solution

Customers

- Taiwan Power Company
- Tatung Company
- AcBel Polytech, Inc.
- Delta Network
- Moxa Taiwan
- Billion



III's In-Snergy

A Cloud-Based Energy Management System

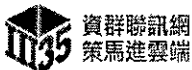
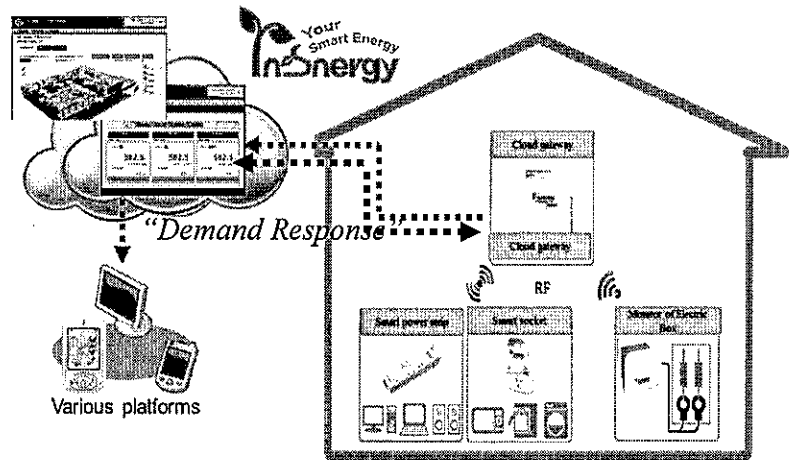


What

- Monitor power consumption
- Remote control linked appliances
- Intelligent decision
- Solar energy management

Customers

- 7-11
- DAIKIN & Hitachi
- Farglory Construction Company
- High school, Czech Republic in Europe



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策馬進雲端

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7

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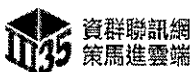
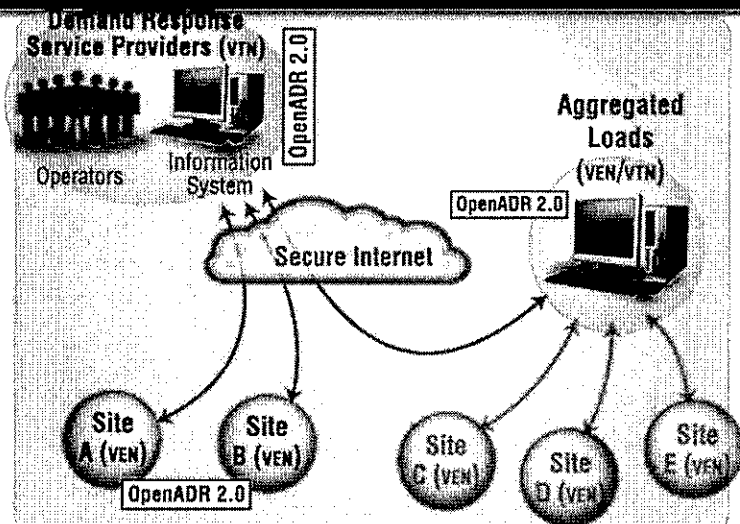
III's SAVE Automatic Demand Response Platform (Asia's second company certified by OpenADR2.0)

What

- Perform Strategic and Policy Research
- Develop OpenADR 2.0 compliant ADR system called SAVE
- Demand Response Automation Server (DRAS) and Client
- Conduct field Trials
- Evaluate "readiness" of commercial buildings to receive common signals;
- Evaluate capability of control shed strategies

Customers / Partners

- Taiwan Power Company
- Central University
- Fujitsu (Japan)
- Quanta (US)



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策馬進雲端

Source: OpenADR Alliance

8

策進會

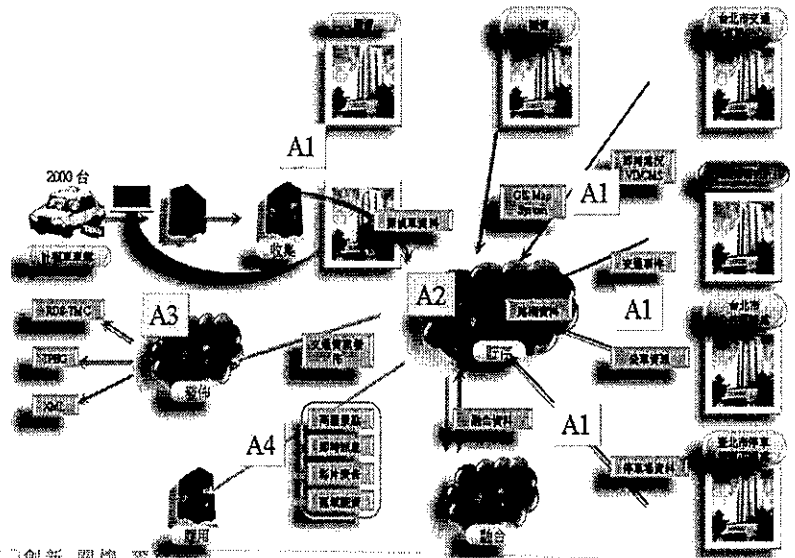
III's City Traffic Flow Analysis & Broadcast with Real-Time Within-Meter Precise Positioning

What

- High performance real-time big data analytics
- Advanced data mining and statistics
- Algorithm to compensate various errors eliminate deviation
- Low cost solution at this level of accuracy

Features

- Collect large scale real-time traffic data : thru taxi-fleet GPS
- Traffic flow broadcast and innovative applications
- Form industry coalition



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Suggested Collaboration Models

Joint Research

- Energy Information and Communication Framework
- Automatic Demand Response/ Virtual Power Plant/ Microgrid
- Smart city applications & user experience methodologies

Field Trials

Welcome French Organizations to join III's existing Service trials in Taiwan such as Taipei, Hsinchu, Taichung, Kaohsiung

Joint Venture in New Services and Solutions

Forming new energy solution companies
Forming new energy service companies (e.g. ADR aggregators)



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10

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*Thanks for
Your Attention*



The Digital & Creative Industries

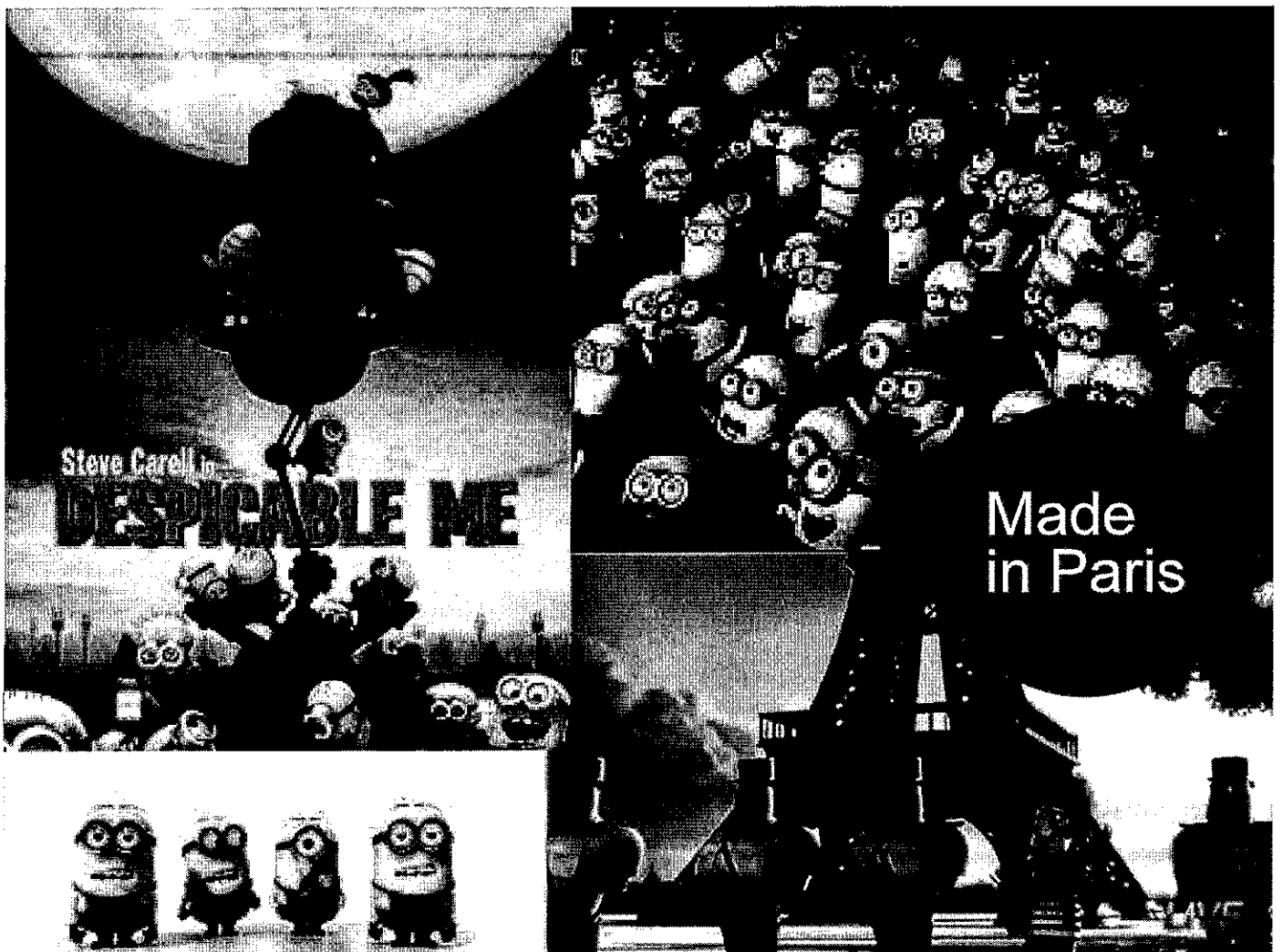
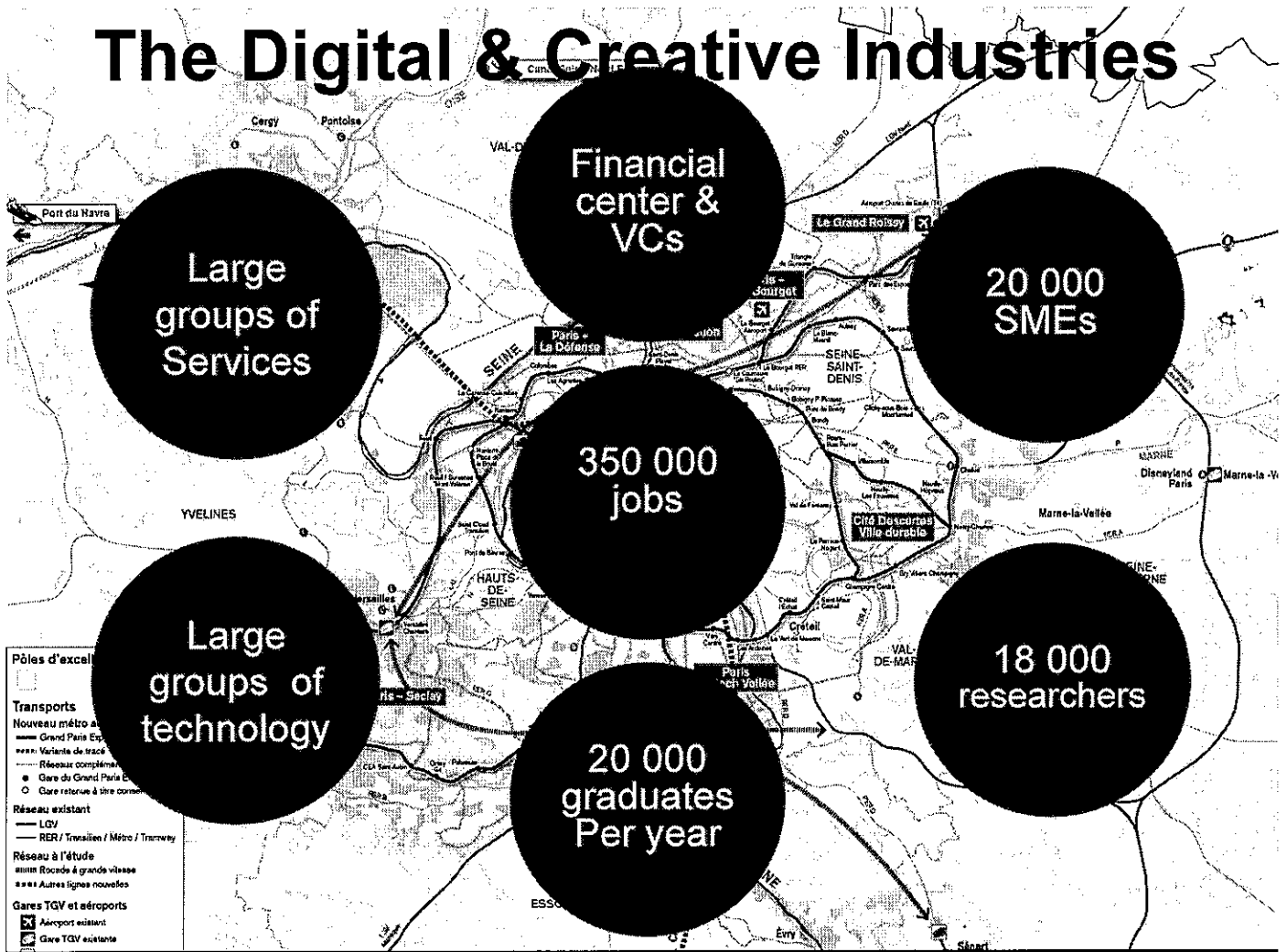
Cooperation Committee
France – Taiwan

12/06/2014

Creative industries in Paris Region

Creative industries -	Workpool	Companies
Film and broadcasting	130,000	4,601
Design, Architecture	16,000	1,180
Press & Publishing	48,000	2,487
Video games	2,000	102
Software	65,000	3,117
Music and live entertainment	26,000	3,483
Advertising	54,000	3,898
Arts	4,000	1,186
Fashion	3,000	268
Total	348,000	20,322

The Digital & Creative Industries



LOGORAMA™

1 short movie
30 000 logos
12 prizes
1 oscar



Heavy Rain - Quantic Dream

2 millions sales & 3 BAFTA 2011

Made
in Paris

Watch Dogs - Ubisoft

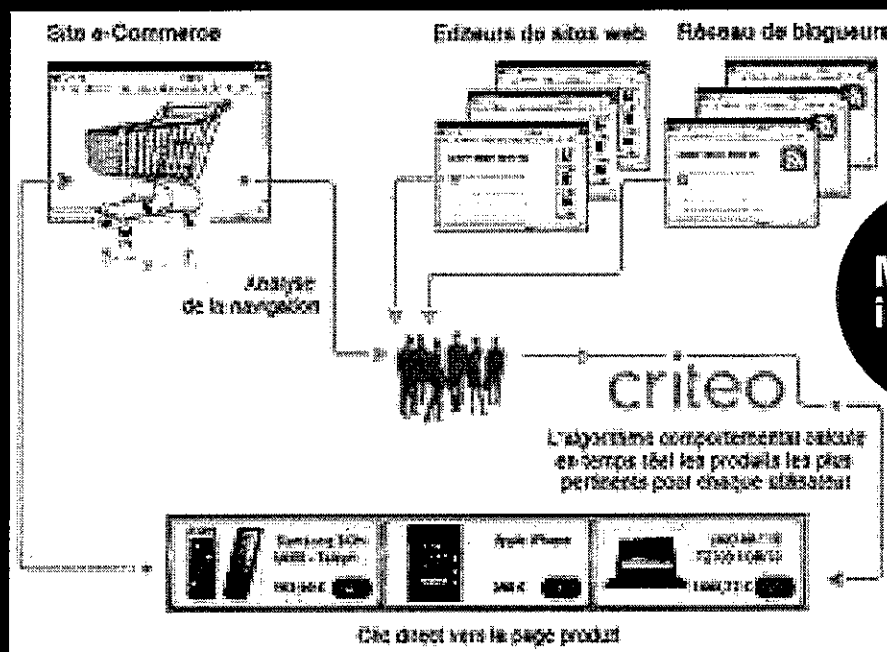
4 millions sales in one week



Made
in Paris

Criteo

World leader in advertising retargeting



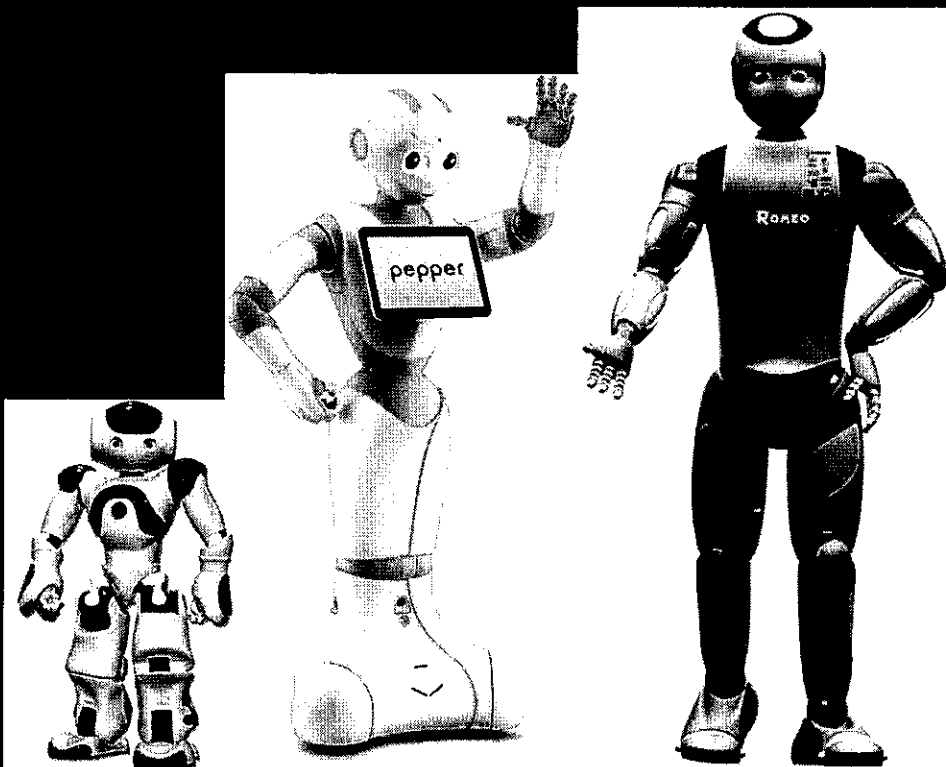
Made
in Paris

Air Drone from Parrot controlled by iPhone



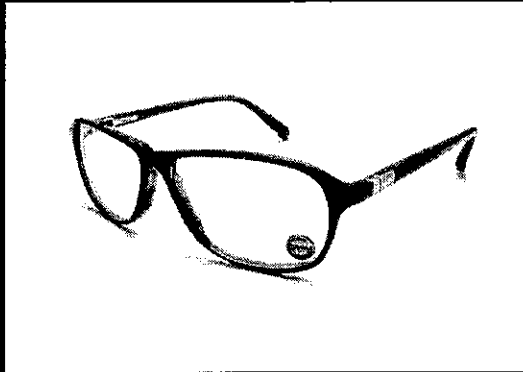
Made
in Paris

Nao – Pepper – Romeo New generation robots



Made
in Paris

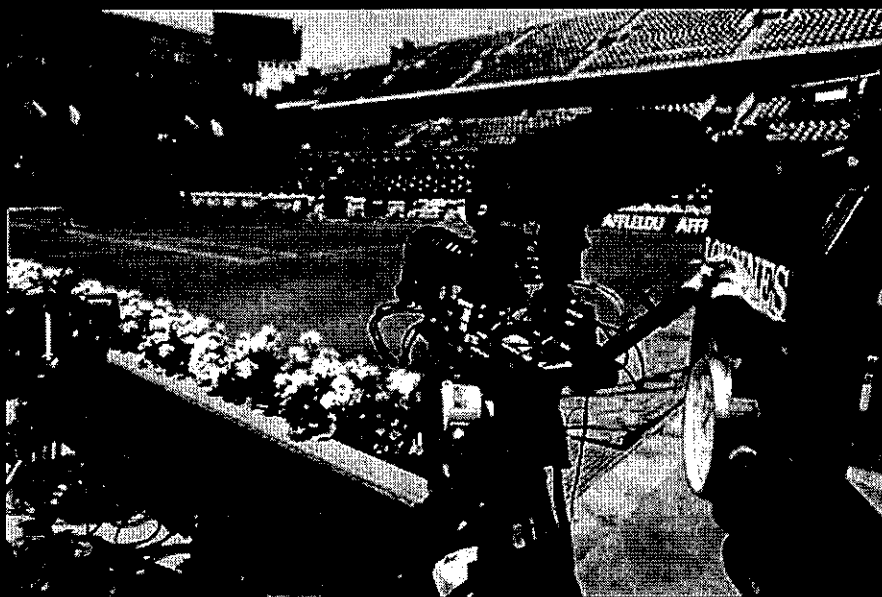
Augmented reality glasses from Essilor



Made
in Paris



First UHD-HEVC Live Event on
DVB-T2, DVB-S2 & IP (OTT)
France Television – TDF – Eutelsat
ATEME – Envivio – Bbright



Autolib – self-service electric cars



Designers: Assoué & High-Graph Architecture

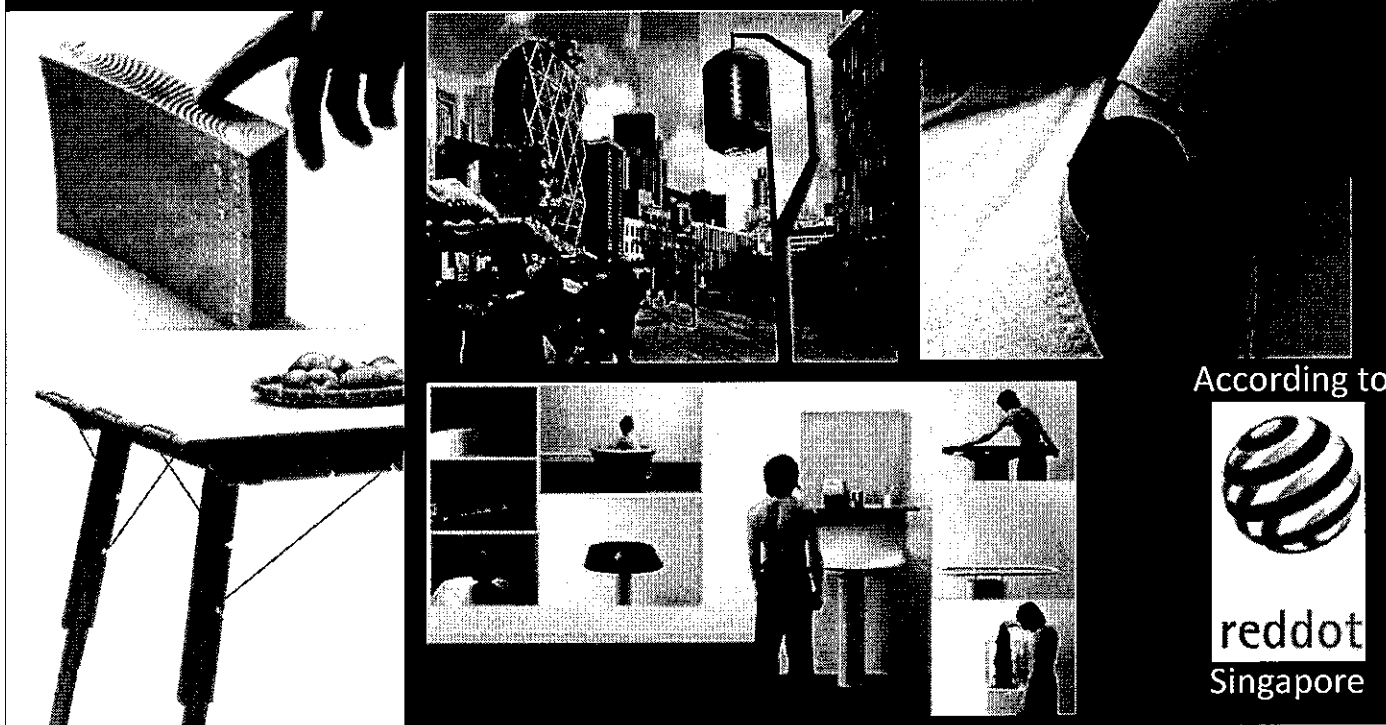


Connected street furniture

ENSCI best design school in Europe and Americas

French national Institute exclusively devoted to industrial design

Every year the school trains 250 students of all nationalities. To date it has graduated 548 industrial designers, trained over 200 textile designers, with 43 graduating since the creation of a degree in textile design in 2002, and awarded 142 specialist Masters degrees.



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Du 14 au 24 juin 2012

LE FESTIVAL DU NUMÉRIQUE

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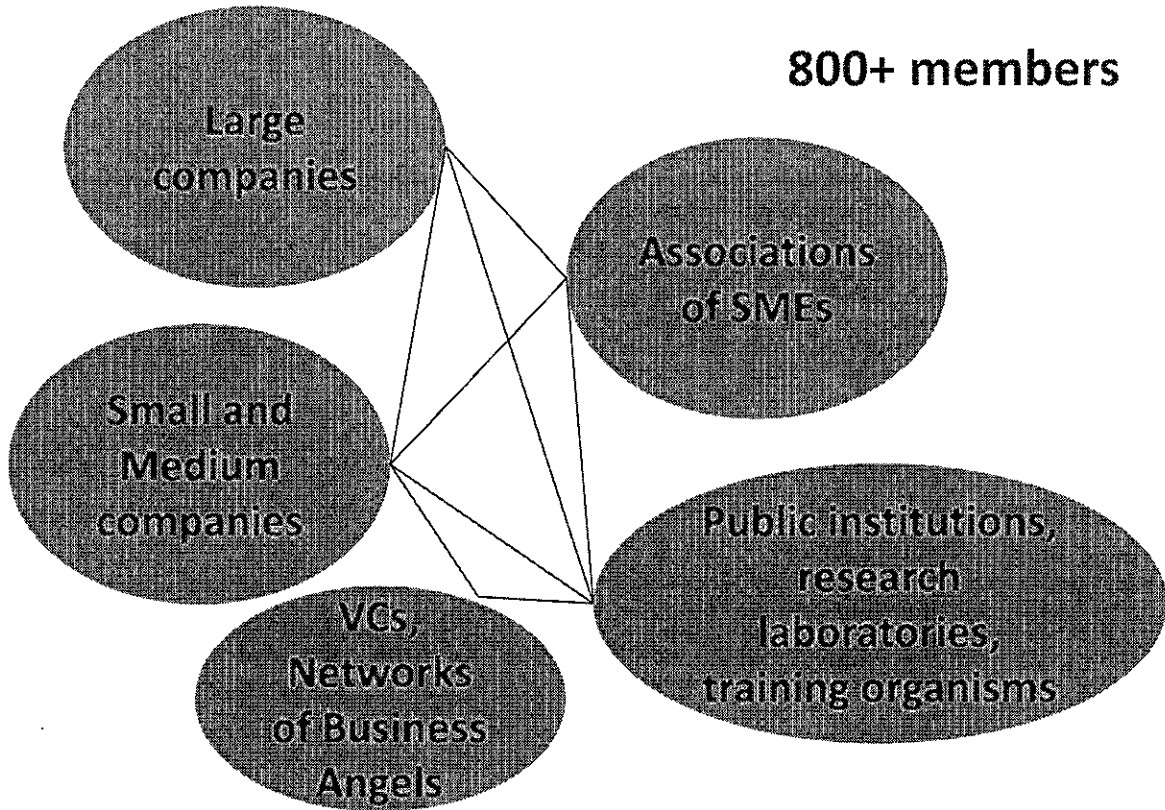
670_{SME} 30_{Groups} 200_{labs} 8_{Associations}

55<sub>Public
Institutions</sub> State Region
& Districts 15_{Investors}

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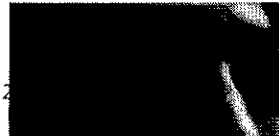
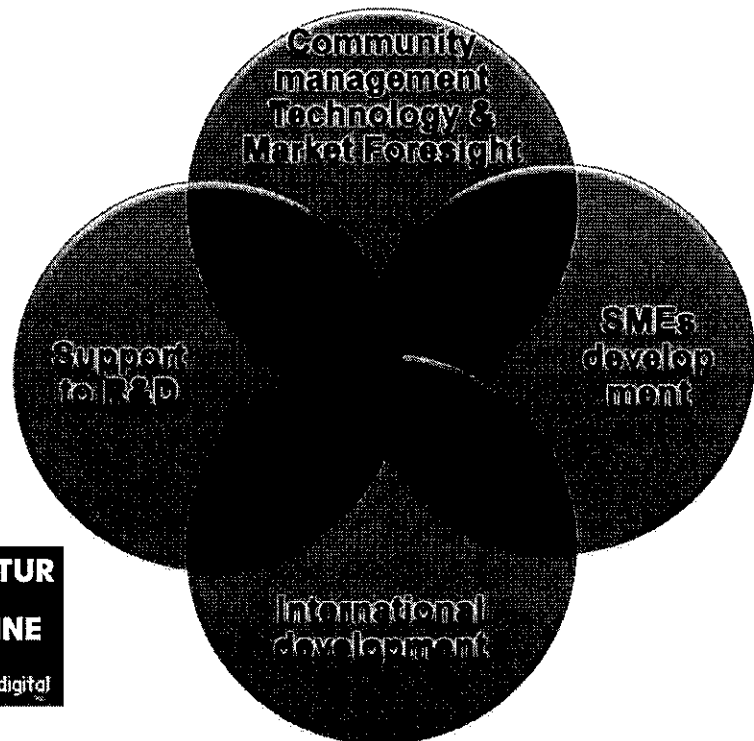


19

Our missions



▶ More than 50 events organised or co-organised per year



ORGANIZATION THROUGH MARKETS

MEDIAS

**E-HEALTH
CARE**

**EDUCATION
TRAINING**

**ENTREPRISE
GOVERNMENT**

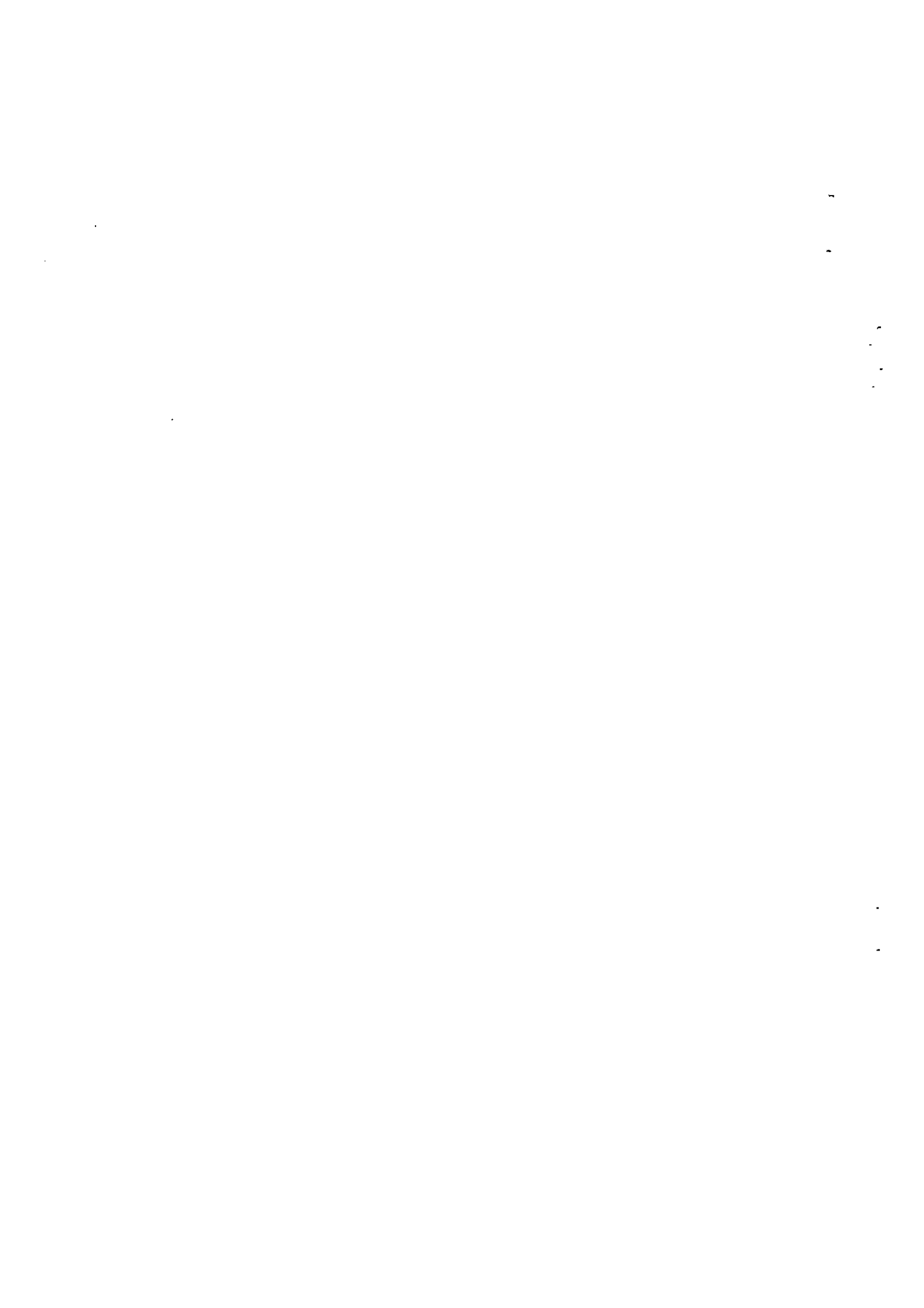
**COMMERCE
RETAIL**

**COMMUNICATION
ADVERTIZING**

SMART LIVING

TOURISM





Taiwan New Media Industry

Institute for Information Industry

Dr. Gary Gong



Passion Innovation, Effectiveness

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Integrated Value Chain to Develop the Digital Signage Industry

DSMA 台灣數位看板多媒體聯盟
DIGITAL SIGNAGE MULTIMEDIA ALLIANCE TAIWAN

Members : more than 160 companies

Panel Display	IPC Player	Software Platform	Content Provider	SI & Service	Media operator Service
AUO Benq 奇美科技 CHILIN	ADVANTECH iBASE CAYIN	CAYIN Idea	TECHART 天工開物 BlueSign Xtralis	ASANTECH Intelligent Services 研華服務 AOPEN AOPEN Computer XIX XIX Technology	NEVA Media 諾瓦媒體 Pilotv

Vertical integration & establishing demo site → Applications and services lead to industry upgrades → Taiwan total solution export

資訊聯網 築馬進雲端

Passion Innovation, Effectiveness

2

Themed Applications and Services Drive Industrial Growth

DS X Smart Exhibition

APAC Digital Signage Business growth

Market size – Vol & Revenue Estimates

Year	Revenue	TAM	SAM	SOM
2012	~0.1	~0.2	~0.15	~0.1
2013	~0.15	~0.3	~0.2	~0.15
2014	~0.25	~0.45	~0.3	~0.25
2015	~0.4	~0.7	~0.5	~0.4
2016	~0.6	~1.0	~0.7	~0.6

DS X Smart Retail

DS X Smart Transportation

Position, Innovation, Effectiveness

3

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Taiwan & France Living Lab cross-border cooperation

Taiwan Living Lab
Digital Signage
inMedia

Lutin Userlab in France
Eye tracking technology

◆ Taiwan Living Lab has established fields of service testing in Taipei, Taichung, and Nanjing (China). In 2014, inMedia service will be expanded to provide service in City of Science and Industry in Paris.

Lutin Userlab


Living Lab Taiwan

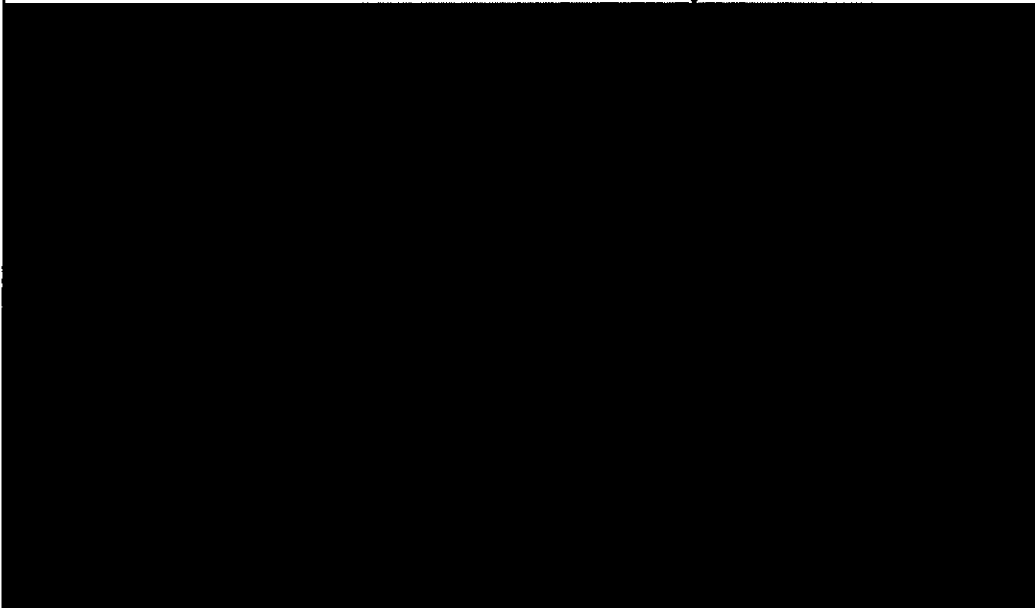
Nanjing Kirin Technology Innovation Park

Cross-border cooperation

4

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 **inMedia - Smart Transportation**



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 **QIANLONG C.H.A.O. New Media Art Exhibition**



《QIANLONG C.H.A.O. New Media Art Exhibition》, coming from the idea of traditional exhibition about aesthetic tastes of the Qing Emperor, is the one of biggest new media art exhibitions of National Palace Museum in 2013.

By using idea and materials of traditional exhibition, it features human body motion tracking, contactless color perception system, image recognition augmented reality and 3D facial recognition, those high tech does transfer the message of experiencing and participating of old ages by all public.

 資訊聯網 築路通雲端

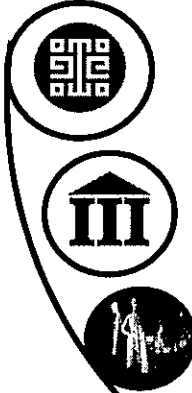
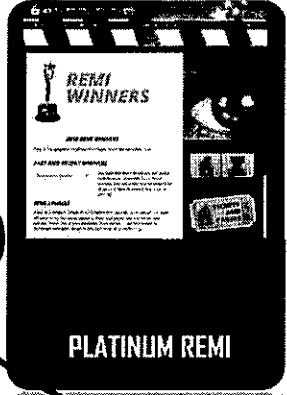
Pursue Innovation, Effectiveness

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6

Award !

◆ 2014 Silver MUSE Award-Interpretive Interactive Installations- AAM
 ◆ PLATINUM REMI at New Media Interactive -Houston International Film & Video Festival





Performance of C.H.A.O.

1 million visitors

350,000 Euro sponsor

4 international tour exhibitions
(working progress)




American Alliance of Museums

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Introduction of C.H.A.O.


Time Mirror

Materials from Portrait of Qianlong




Forrest of Vases

Materials from Ku Vessel with Plantain-leaf and Indian Lotus Designs




Stamps of Landscape

Materials from Activities of the 12 months




Trees of color

Material from Vase with Decoration of Floral Pattern and the landscape in Yangcai Painted Enamels




Everyone can be a Qianlong

Photo exhibition




© 2014 Institute for Information Industry

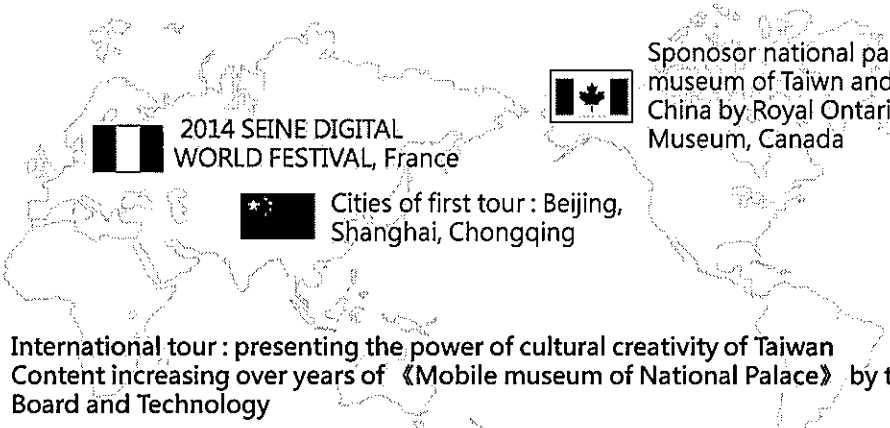



QIANLONG C.H.A.O.


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Planning of Tour Exhibition




-  2014 SEINE DIGITAL WORLD FESTIVAL, France

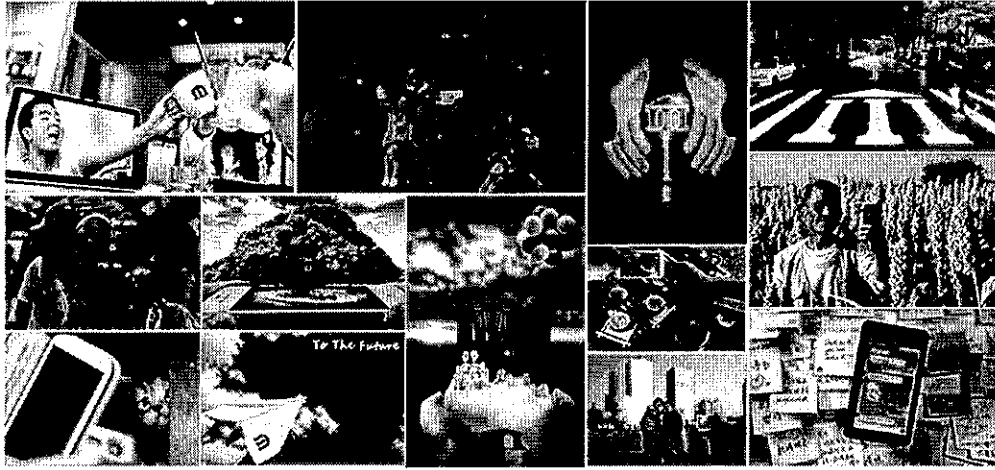
-  Sponsor national palace museum of Taiwan and China by Royal Ontario Museum, Canada

-  Cities of first tour : Beijing, Shanghai, Chongqing

- ◆ International tour : presenting the power of cultural creativity of Taiwan
- ◆ Content increasing over years of 《Mobile museum of National Palace》 by the Board and Technology



Thank You




Winning works of 2015 IIT Photography Competition




Passion, Innovation, Effectiveness

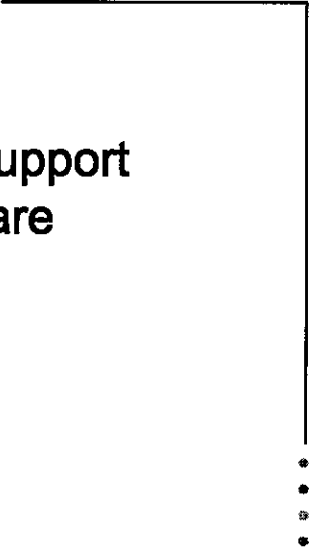
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French policy to support digital healthcare




direction générale de la compétitivité
de l'industrie et des services



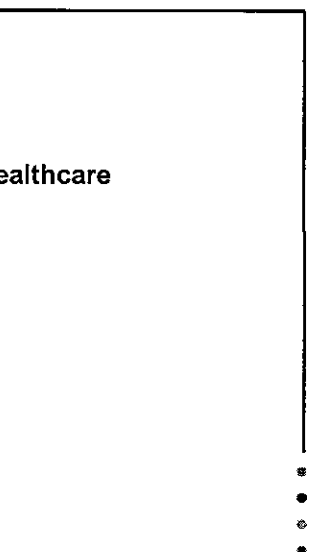
1

Summary

- **Key challenges**
- **Industrial strengths**
- **Innovation support in favour of digital healthcare**
- **Focus on healthy ageing**
- **Industrial plans**



direction générale de la compétitivité
de l'industrie et des services



2

Key challenges

- **Healthy ageing**
 - Multi-pathology
 - Chronic disease
- **Control healthcare costs**
- **Geographical distribution of healthcare services**
- **Continuity of the healthcare chain**
- **Trust in healthcare system**

Industrial strengths

- **Big Data analytics**
- **Connected devices & automation**
- **Information & communication systems**

Innovation support in favour of digital healthcare

- **Especially for digital healthcare, R&D&I is both :**
 - Technological
 - Organisational
- **Projects calls :**
 - 2 specific projects calls to promote health at home (one is more focused on building demonstrators)
 - 2 projects calls on Big Data analytics, including healthcare as a major application theme
 - Recurrent generic project calls to fund various innovative projects including digital healthcare
 - 1 specific project call focused on improving regional organisation of healthcare, based on innovative digital services

Focus on healthy ageing

- **Political engagement between State and industrials leader in order help the emergence of the industrial sector of « Silver economy »**
 - market emergence, in relation with policy makers, competitiveness of industrial offer, working at international level, professionalization of stakeholders, communication and marketing in favour of elderly people, supporting disruptive innovations
- **Worldwide innovation challenge**
 - Silver economy is 1 of 7 strategic goals
- **National reference centre for home care and autonomy**
 - Work on improving global quality of services provided, through labelling program
- **KIC focused on healthy ageing at European level**

Industrial plans

- **One plan called « Digital healthcare » is specifically focused on this topic (amongst 34 industrial priorities)**
 - Leaders : Christian Nibourel & Mireille Faugère
 - Main focus : modernization of healthcare provision in medical facilities, as well as to outpatients
 - 3 axes :
 - increasing the quality of healthcare provision
 - reining in healthcare costs
 - providing the French industrial sector with growth opportunities
- **Other plans related to digital healthcare**
 - Smart textiles, medical devices and new healthcare equipment, big data, connected devices



Smarter Healthcare

Connecting Data, People and Care Services
Together for Quality Living

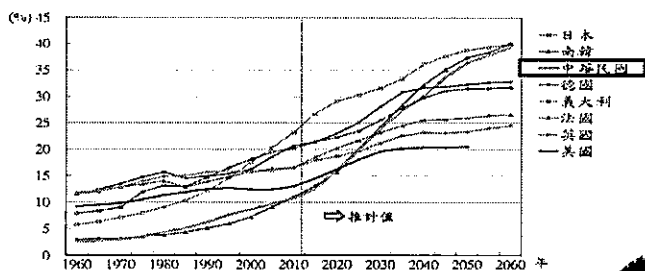
Chien-Hsin Daniel Cheng, Ph.D.
Director
Biotechnology & Pharmaceutical Industries Promotion Office
Ministry of Economic Affairs



Healthcare Challenges and Opportunities

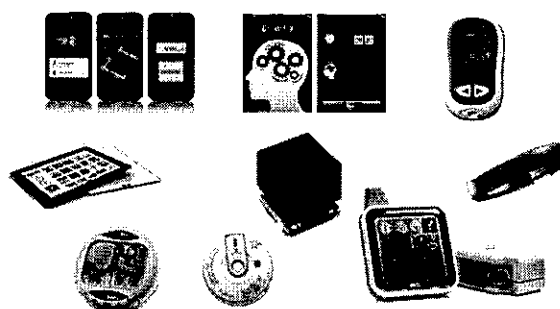


Aging and Aged Society



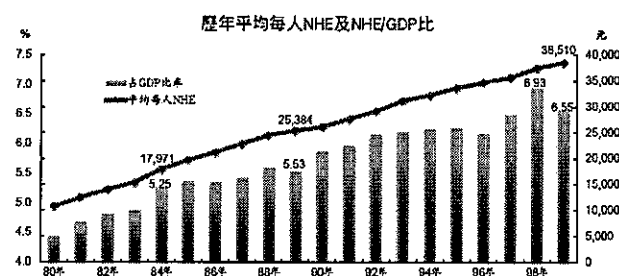
資料來源：中華民國—本報告、日本—日本國立社會保險人口問題研究所，2012年1月、韓國—國家統計局 (National Statistical Office)，2011年12月、美國—United States Census Bureau、法國、德國及義大利—EUROSTAT。

Affordable Mobile and Measurement Device

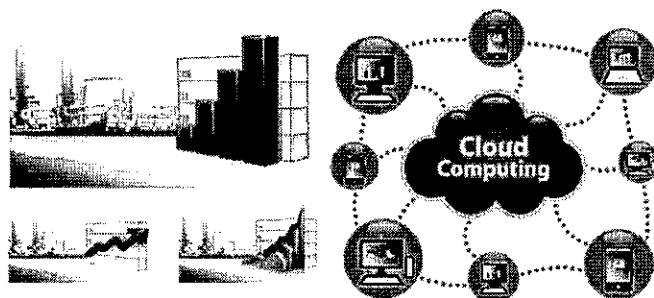


Growing Healthcare Expenditure

99年 NHE/GDP 為 6.6%



Powerful Cloud Computing and Big Data Analytics

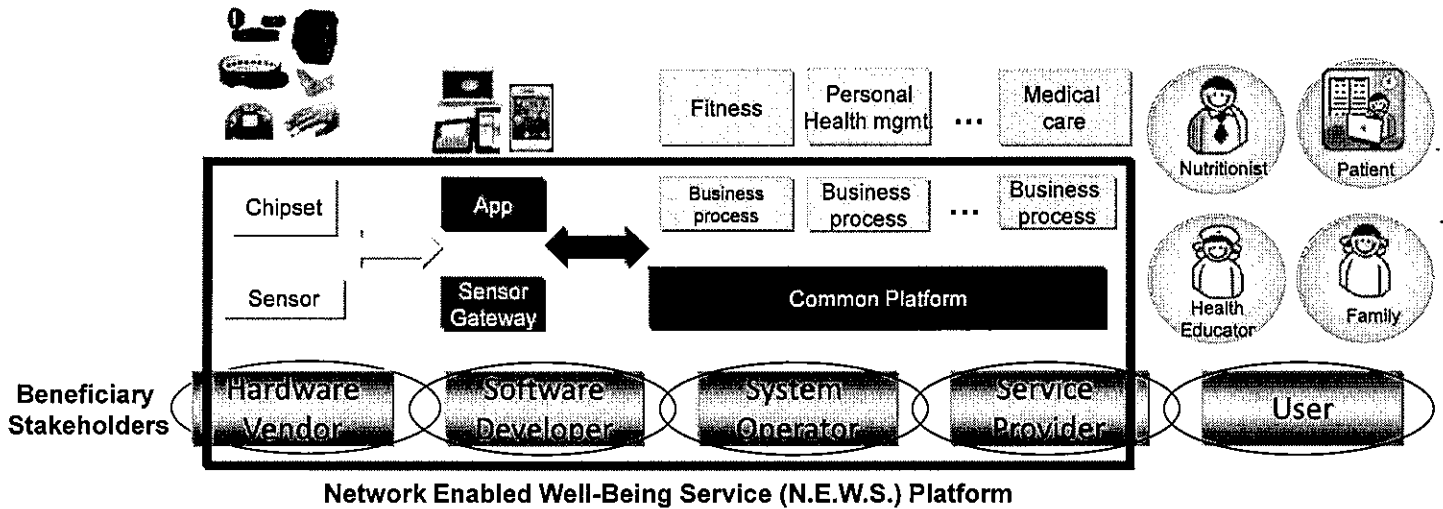




Connecting Data, People and Care Services



Connecting data, people and care services through a well-integrated ecosystem platform



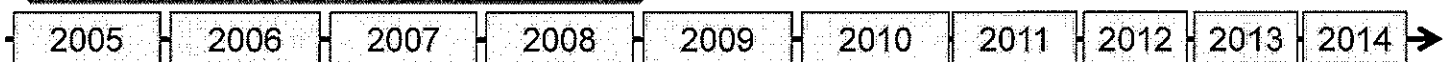
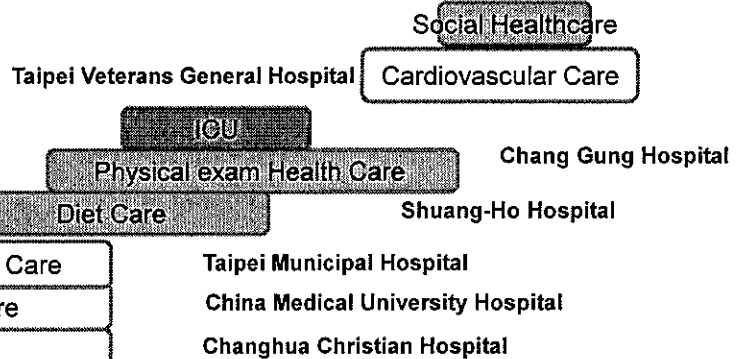
Some healthcare projects sponsored by government

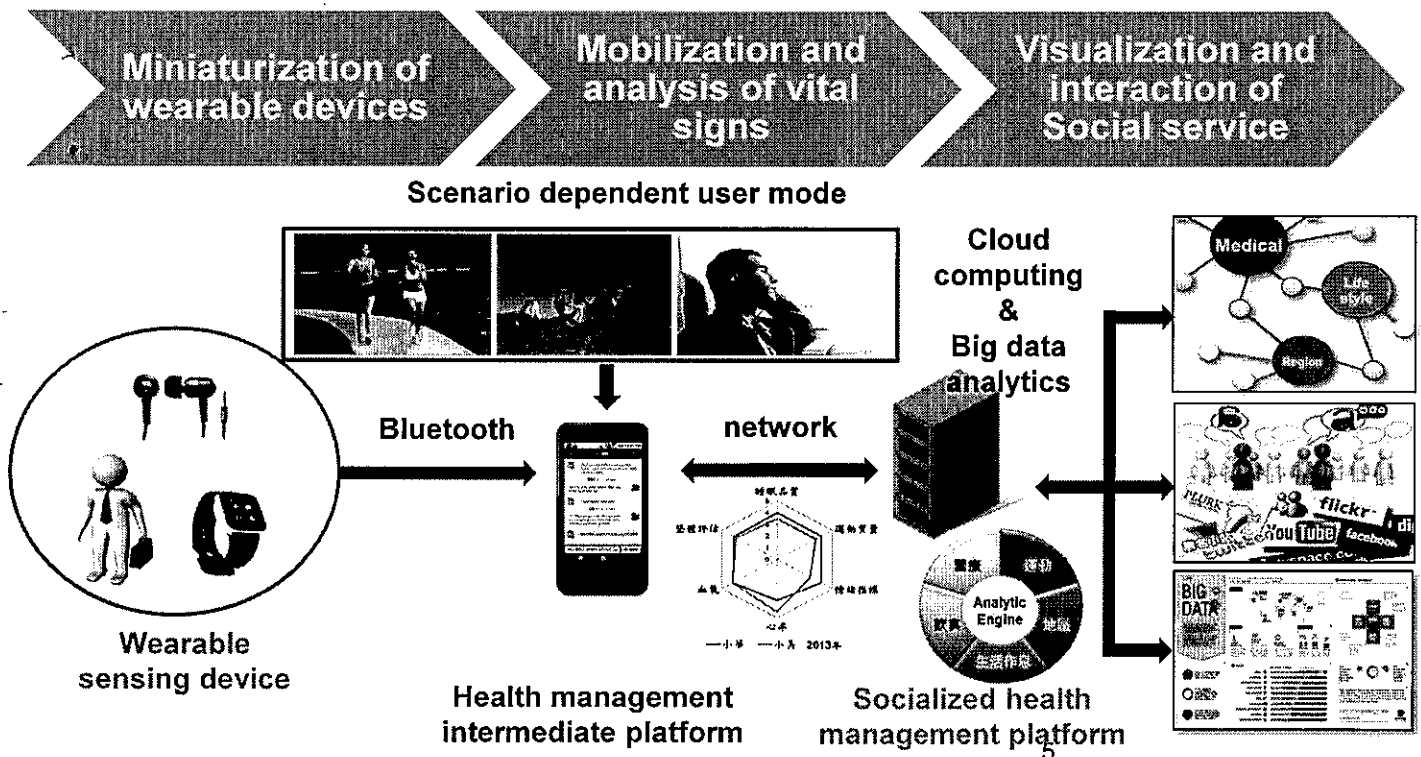


- Provide complete and integrated system service platform across the industry
- With innovative technology research and development, integration, data analysis, practical experience in working with vendors and imports
- Provide innovative service model design in ICT applications integration and business model design experience in various disease areas for the health care field
- Provide technical integration and application

Far Eastern Memorial Hospital Corporate Health Mgmt.
Wanfang Hospital Medical Tourism

- Acute Disease
- Chronic Disease
- Health Promotion





Innovation, Compassion, Effectiveness

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Example – Integrated Cardiac-Care Service



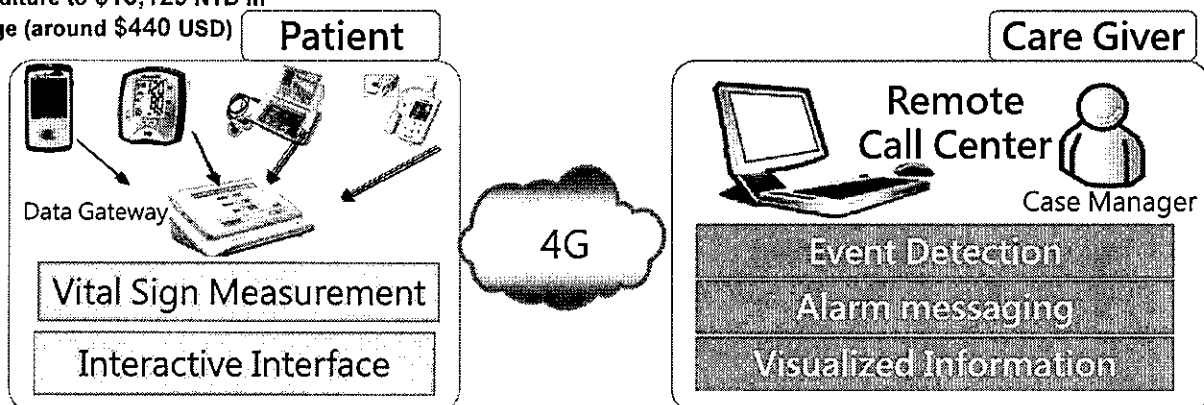
Consistent human-computer interface
Readable information visualization
Rule-based event monitoring
Analytics-driven decision support

- 100+ patients participated in the trial
- Lowered re-admission rate from 10% to 1%
- Reduced patient healthcare expenditure to \$13,129 NTD in average (around \$440 USD)



Partnership with Taipei VGH

- Top-tier medical center in TW
- 6,000+ employees
- 2.5 million+ outpatient visit
- 3,000 beds





Example – Personalized Diabetes Management



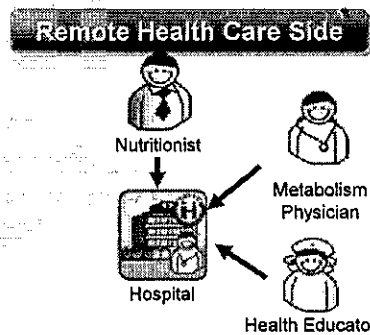
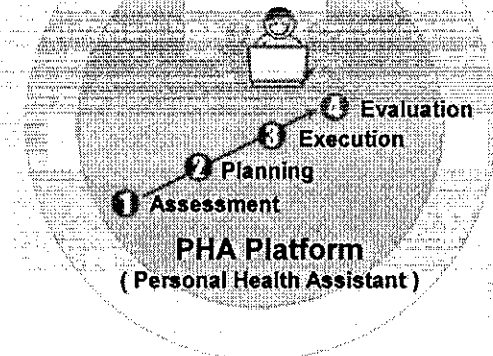
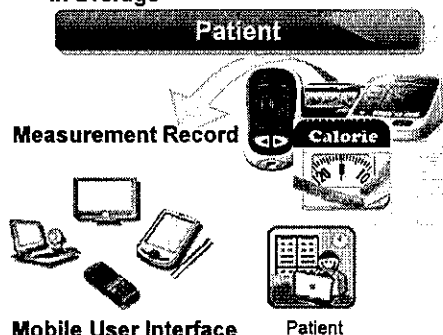
2,000+ patients participated in the trial

- Lower patient's HbA1C from 7.47 down to 6.83 in average
- Lower patient's ADRR (Average Daily Risk Range) from 25.65 down to 22.62 in average



Partnership with Changhua Christian Hospital

- Top-tier medical center in TW
- JCI accredited
- 1.8 million+ outpatient visit, 1600+ beds



Personalized content delivery
Personalized analytics

This section displays two screenshots of the system's interface. The left screenshot shows a dashboard with various charts and data points, while the right screenshot shows a more detailed view of personalized analytics.

Visualized case management

This section shows a screenshot of the visualized case management interface, which includes a table of cases, a pie chart, and other data visualization elements.

Innovation, Compassion, Effectiveness

7

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Conclusions



- Taiwan ICT industries are with capabilities and experiences of healthcare solution.
 - Strength of healthcare ecosystem
 - High quality of medical care service with reasonable low cost
 - Well and proven national health insurance system
 - Government supported tele-care service and required hardware/software
 - Taiwan is an ideal trial field for health care services
 - Applicable contexts
 - Elder care, home-based health management, tele-care, long-term care, acute care
 - ICT capabilities
 - Vital sign sensor, wearable devices design and manufacturing, mobile gateway and cloud infrastructure
 - Automatic data collection, information interpretation/alarm, IT-enabled care intervention, big data analytics etc.



Thank You

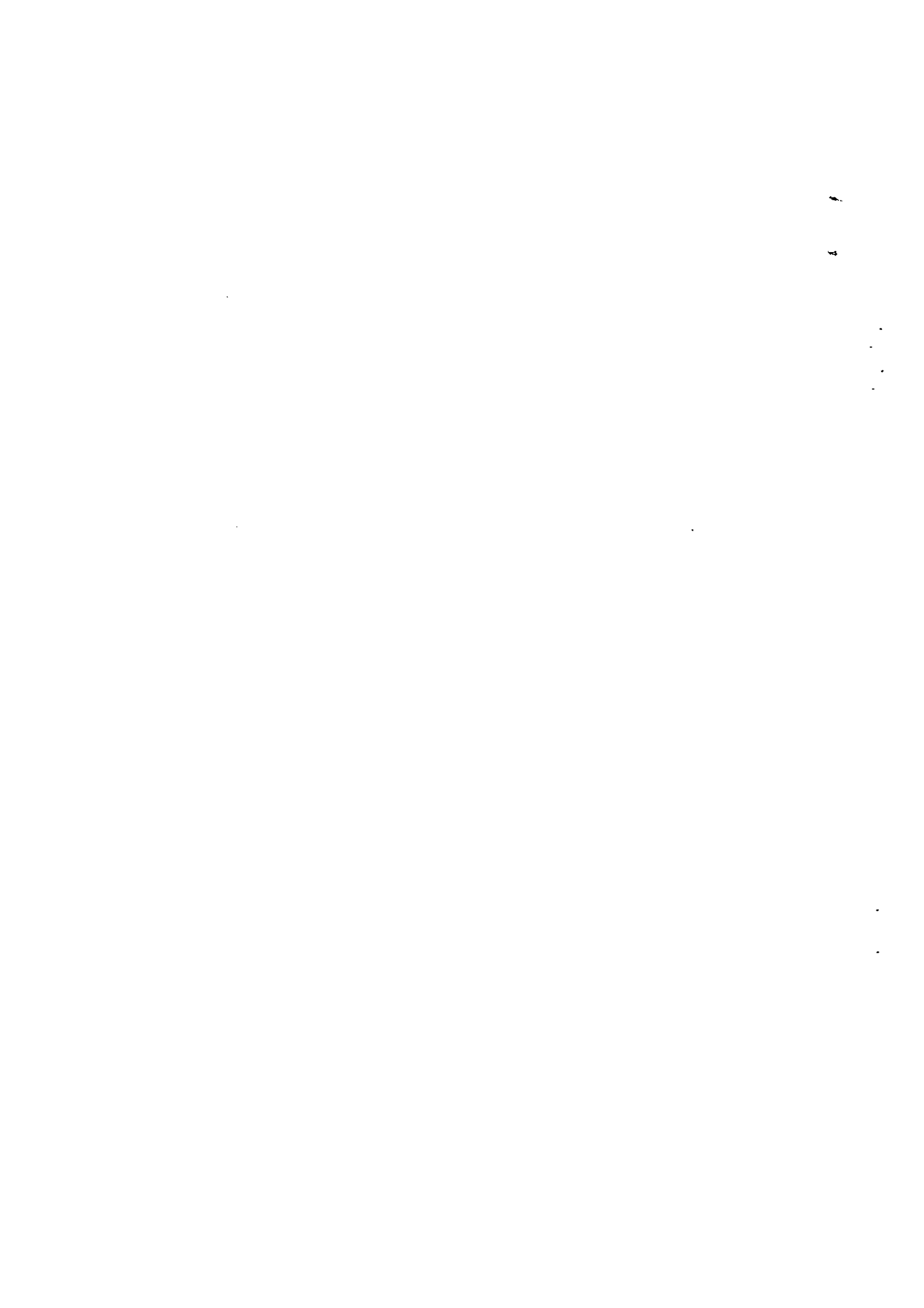
Merci

CONTACT INFORMATION:

DR. GRACE LIN, VP & DIRECTOR GENERAL, ADVANCED RESEARCH INSTITUTE, INSTITUTE FOR INFORMATION INDUSTRY(III), TAIPEI, TAIWAN

EMAIL: GRACELIN@III.ORG.TW, TEL: (886) 2-6607-2989

ASSISTANT: JULIE CHEN, EMAIL: JULIECHEN@III.ORG.TW, TEL: (886) 2-6607-2909



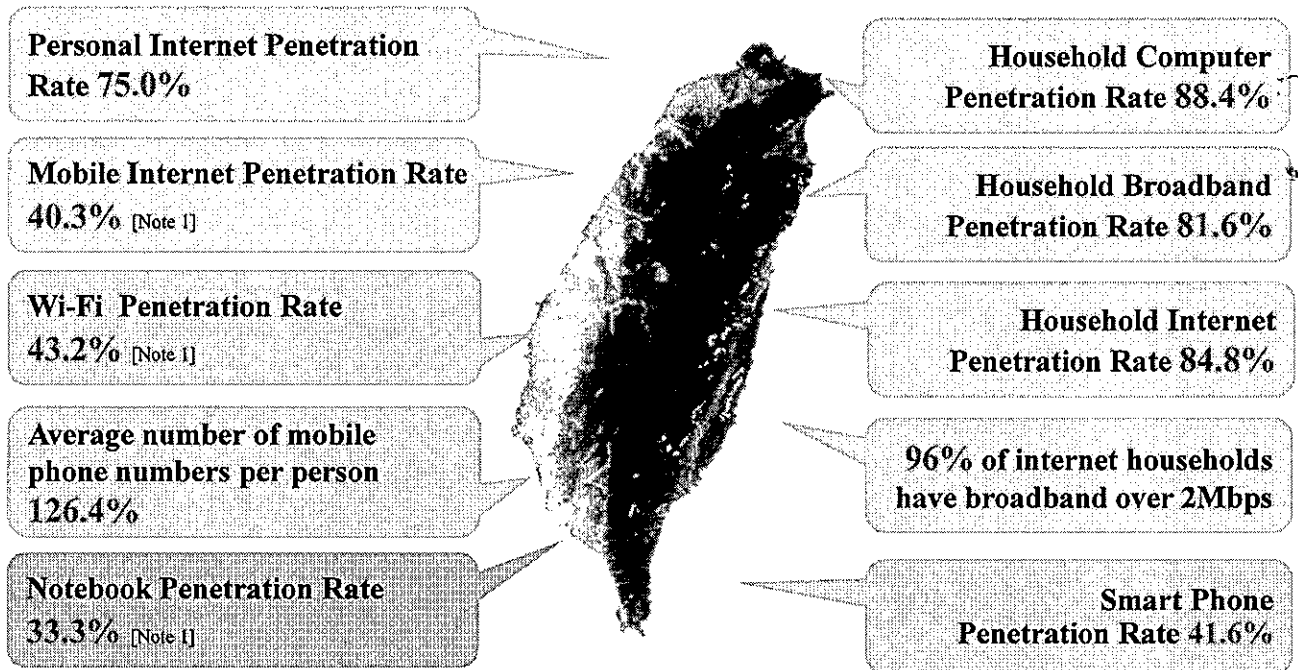
Taiwan 5G Development Framework



- **Taiwan Policy Practice on Broadband Wireless Communication**
- **5G Development Framework in Taiwan**
- **Conclusion**

Taiwan's ICT Industry Status

High Consumer Internet Penetration Rate



Note 1: Statistical data up to March 2013
Compiled by: FIND of IIL, April 2014

Taiwan's ICT Industry Status

Excellent ICT Hardware Industry



NB

WW No.1
TW/WW Mkt Share
89.60%



Motherboards

WW No.1
TW/WW Mkt Share
80.80%



LCD monitor

WW No.1
TW/WW Mkt Share
65.70%



Server

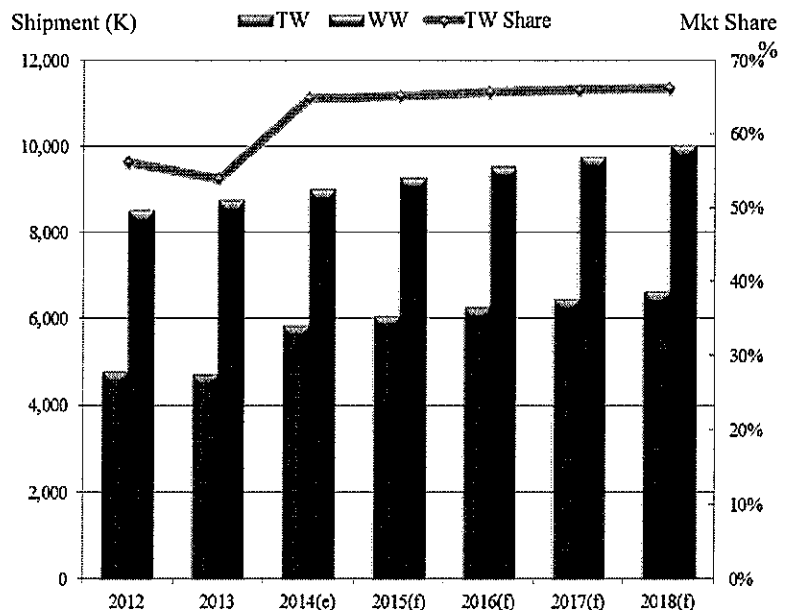
WW No.1
TW/WW Mkt Share
53.90%



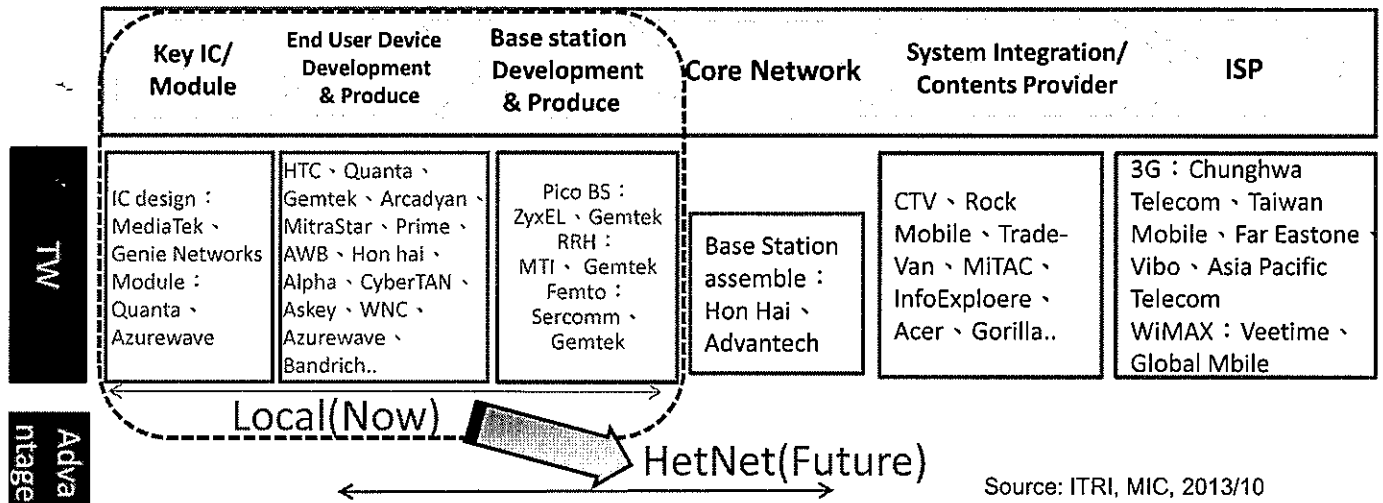
Tablet device

WW No.1
TW/WW Mkt Share
47.90%

2012–2018 Taiwan's Server Vendor's Shipments and Global Market Share



Taiwan 4G/B4G Development Make Advantage in 『Local Area』 Technology and Wireless Broadband Terminal

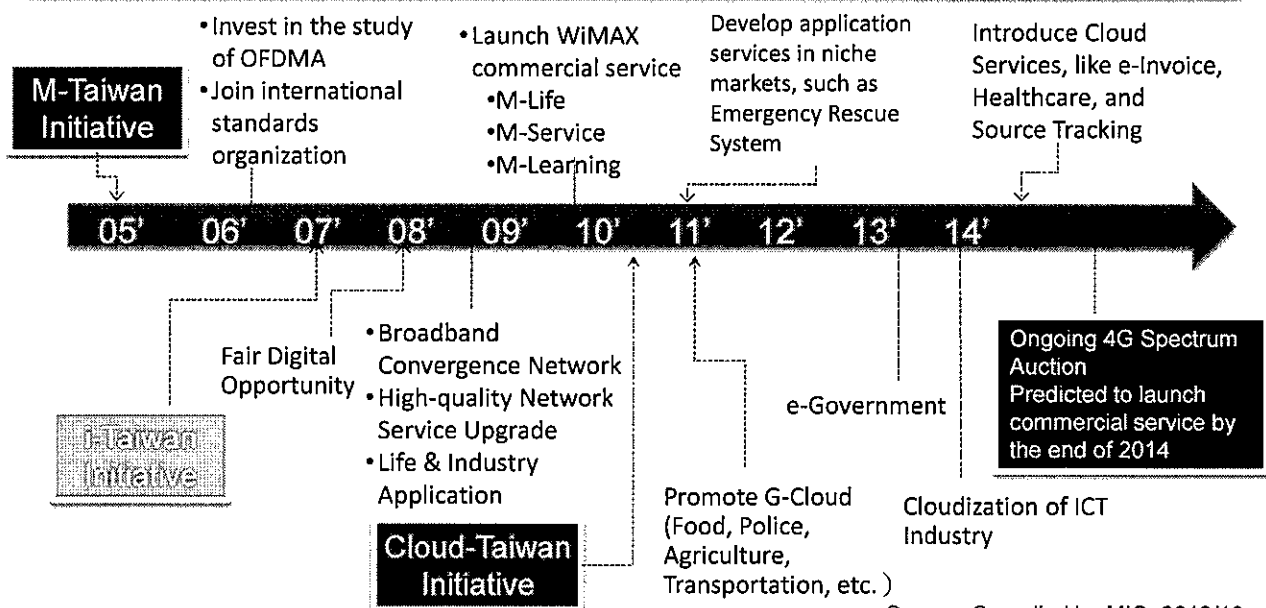


- **ZyXEL** : maintained long-term close OEM relationship with Europe carrier grade equipment vendor and shipped 4G small cell products recently.
- **Gemtek** : has WiMAX Pico BTS R&D experience, and has shipped 3G Femtocell, is also currently in the R&D of 4G Small Cell .
- **Sercomm** : has awarded several 3G Femtocell bids from Europe leading carriers over the past few years and recently demonstrated Multi-mode 4G Small Cell.

5

Network Convergence Puts Cloud Services Industry into Practice

Vision : Any where, Any time for Any One to Enjoy Broadband/Wireless Services



Source: Compiled by MIC, 2013/10

- Execute a Regional Plan for Taiwan Smart Network to complete mobile/broadband value chain of Taiwan communication industry.
- Promote feature services to accumulate soft power and to stimulate substantial economic growth.

6

hTC ~ One of the Most Innovative Mobile Phone Company In the World



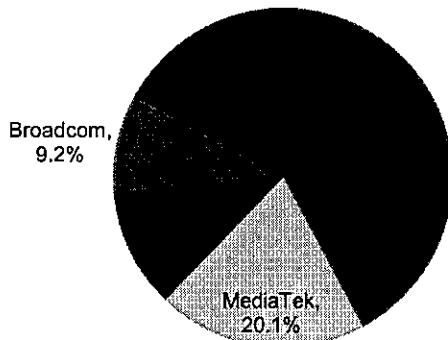
Source : hTC

- The Boston Consulting Group (BCG) announced the world's 50 most innovative companies in 2013. hTC Corporation was named 24th innovative company in the world.
- hTC corporation is a game changer. hTC One used a more advanced sensor and optical lens system to take better quality pictures than other phones with higher megapixel cameras do.
- hTC Corporation is a pioneer in Android system and specialize in creating a more friendly interface.

7

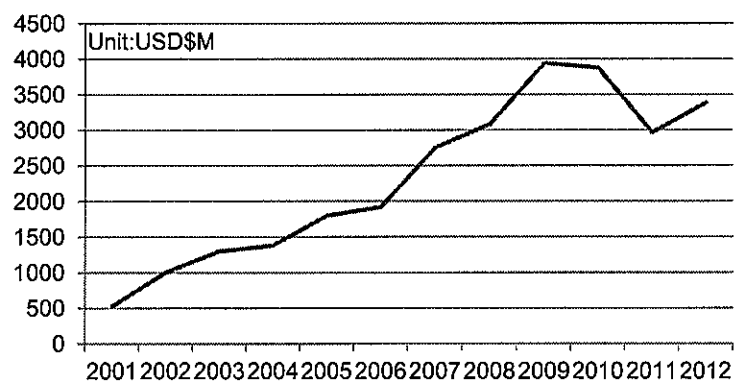
MediaTek ~ A Leading Fabless Semiconductor Company

Global Smartphone Baseband Processor Market Share in 2012



Source : MIC · 2013/10

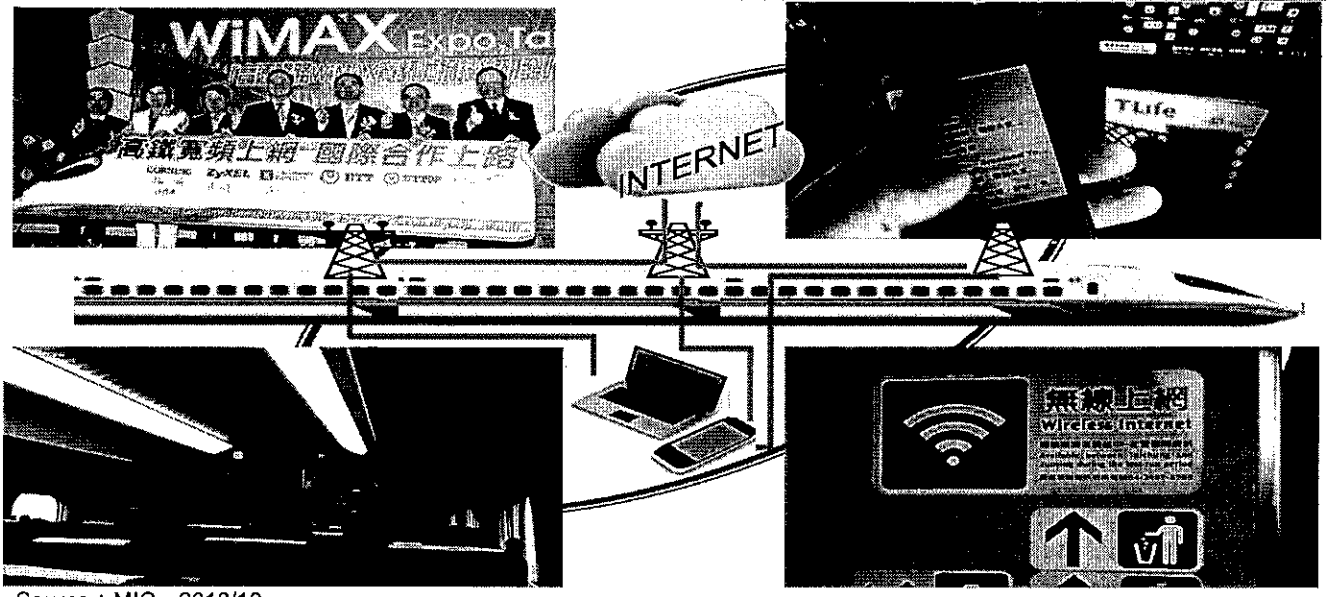
MediaTek Annual Revenue · 2001-2012



Source : MediaTek · 2013/10

- MediaTek is the major smartphone chip supplier of Chinese smartphone makers, taking 52% market share in China market in 2013.
- MediaTek received 20.1% market share of Global Smartphone Baseband Processor , winning the 2nd place in the world.
- MediaTek was selected as one of "The World's Most Innovative Companies" by Forbes in 2013

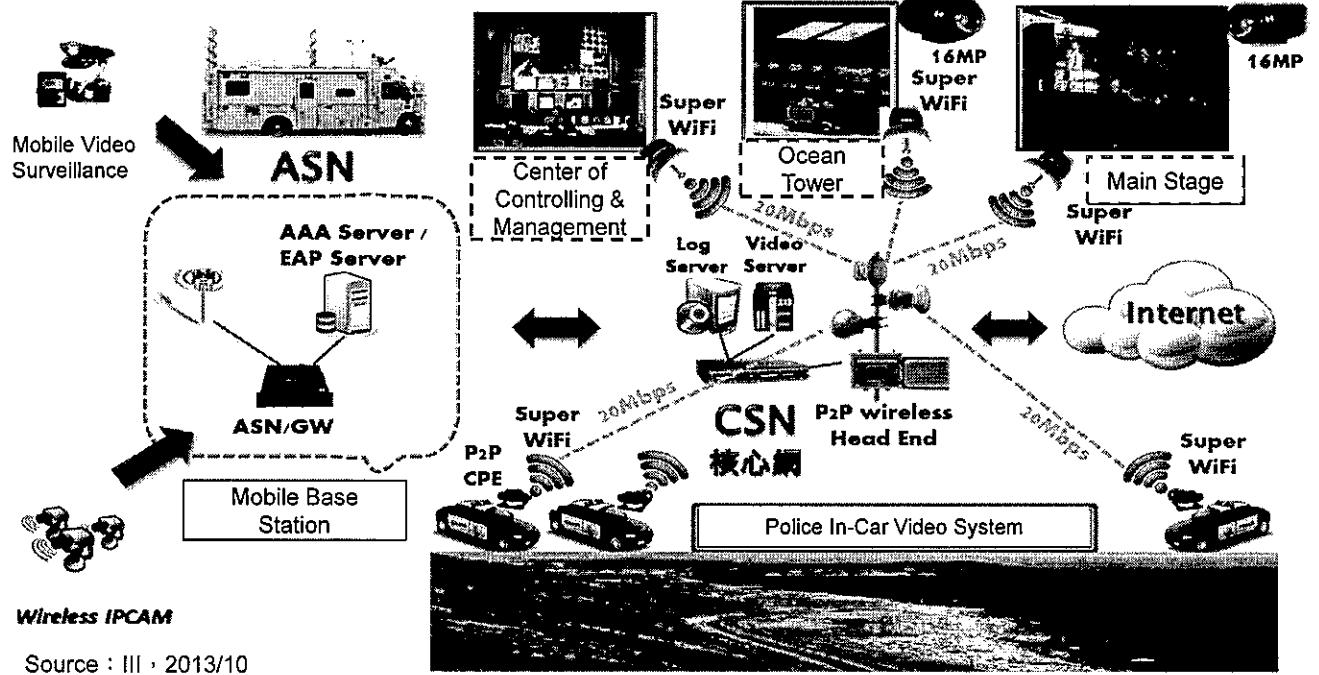
8



Source : MIC · 2013/10

- Taiwan has developed world first HSR WiMAX/Wi-Fi public internet access system with building 360km-length Fiber infrastructure/hundreds of WiMAX BTS, and already delivered the service from August 2013.
- With the development of Radio-over-Fiber and 2.6 GHz MIMO technology of WiMAX, HSR can provide stable internet access service when a train is running at the speed of 300 km/hr .
- Currently there are 2 trains provide Wireless Internet Service, download rate of 3Mbps, and almost over 400 thousand accumulate users have used this service.

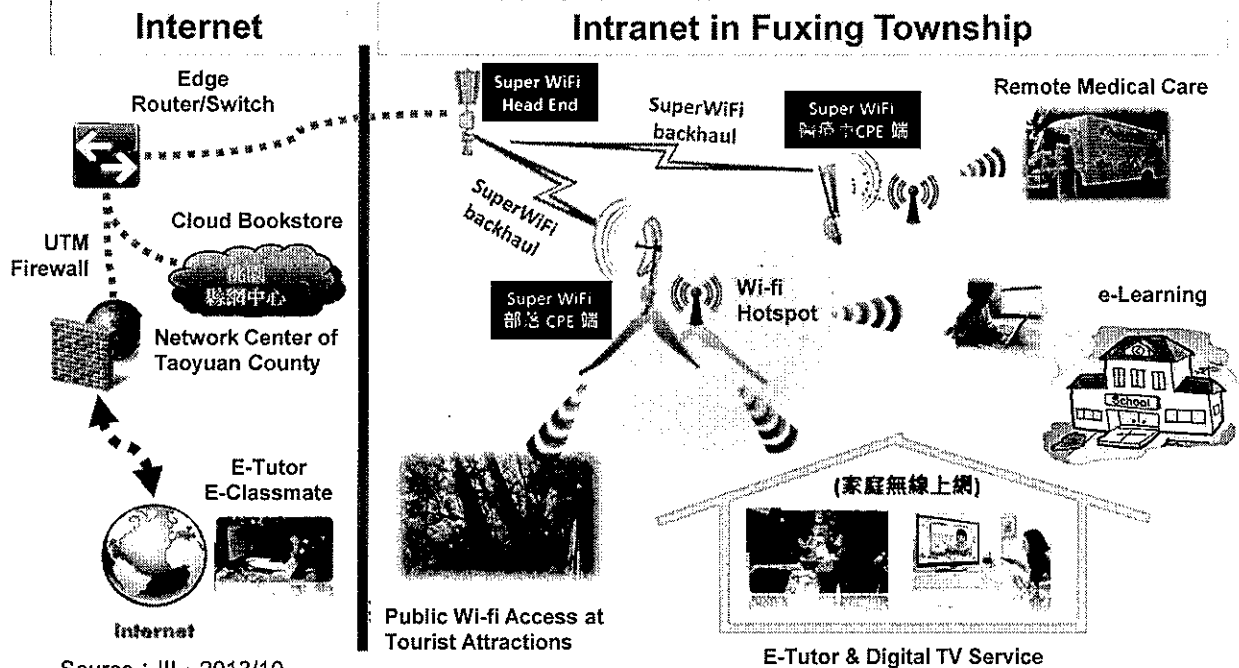
Hetnet Service in Ho-hai-yan Rock Festival 2012



Wireless IPCAM

Source : III · 2013/10

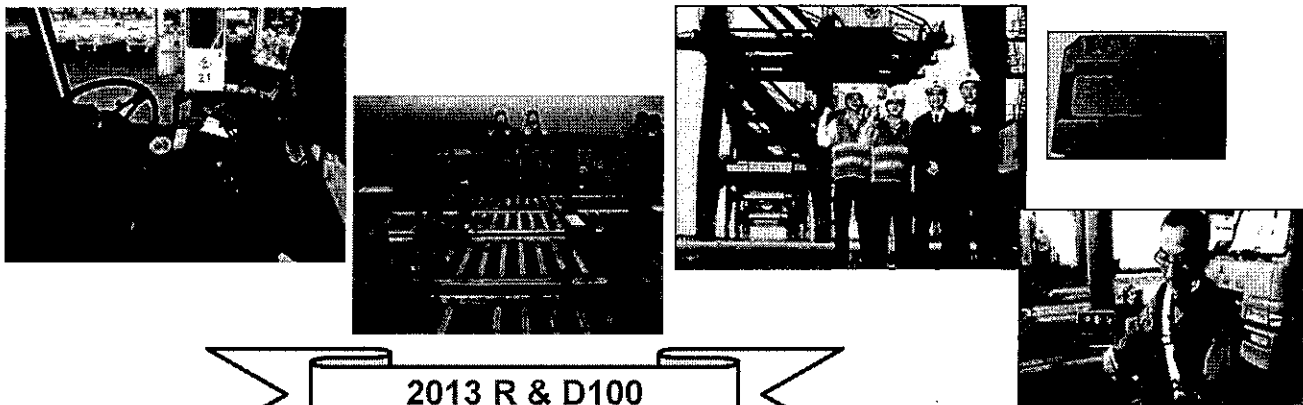
- The Scale of Rock Festival: There were around 870 thousand music fans under the protection of 500 securities in 5 days.
- Use SuperWifi Hetnet to transfer videos and data back to Center of Controlling & Management .



Source : III · 2013/10

- Select remote tribes at high altitudes to provide safe & stable dual-directional transmission with Hetnet installation.
- Wireless LAN Installation Area: Hualing, Gaoyi, San Guang Tribes in Fuxing Township (with around 3,000 residents in total).

11



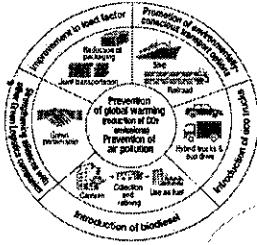
2013 R & D100 Awards !

Source : III · 2013/10

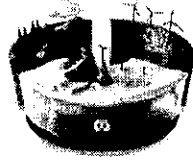
- ZigBee Wireless Sensor Network not only overcomes the one-way transmission limit of RFID but replaces the data transmission channel originally provided by Trucking Radio.
- To overcome the multi-ID interference is the vital issue for ZigBee. Currently, the near-field identification rate of ZigBee technology has reached 99.5%, marking as an important technology breakthrough.
- ZigBee technology has elevated the managing elasticity of harbor operating system by scheduling algorithm patent. This has increased 50% of operating efficiency and enhanced 20% of total revenue of Port of Taipei.

12

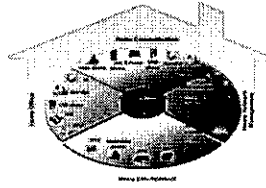
Smart Logistics



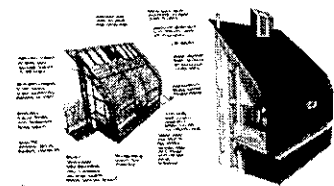
Micro Grid



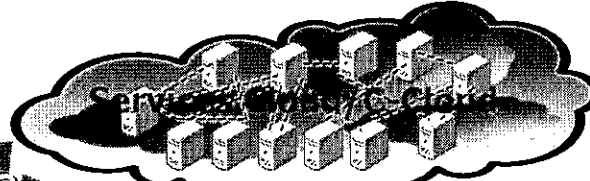
Green Devices



Green Digital Home



Reliable Heterogeneous Network (IMT-2020)



Big Data Analytic

Natural Interface Devices



Social Net.



Aug. Reality

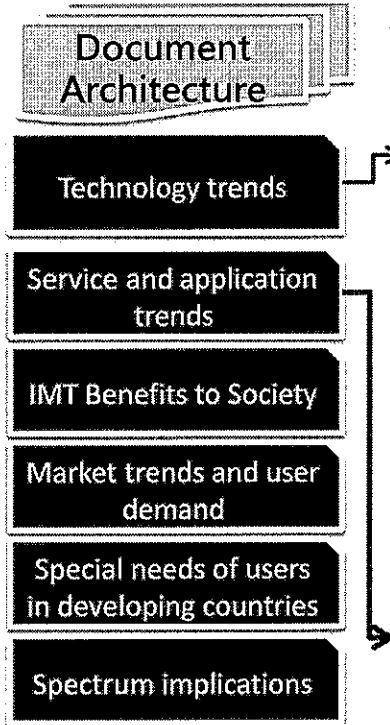


Green Urban Transportation

- Taiwan Policy Practice on Broadband Wireless Communication
- 5G Development Framework in Taiwan
- Conclusion

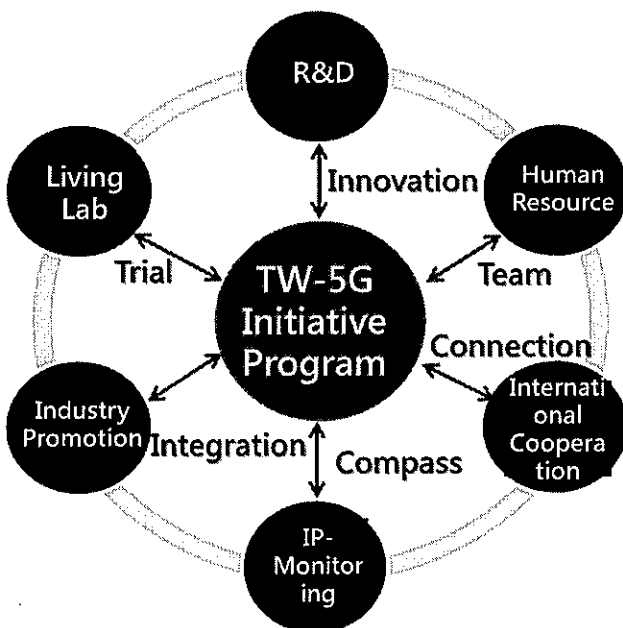
Working Group(WP 5D) plans to stabilize the document in early 2015

The Provisional conclusion of the IMT 2020 Workshop in Hokkaido (2013/07)



- **Technical Goal For Future IMT**
 - ✓ More than 1000 Gb/s/km² in dense urban environments
 - ✓ More than 100 000 users and 10 000 machine devices within 1 km²
 - ✓ More than 10 times higher spectral efficiency
 - ✓ 10 times to 100 times higher typical user data rate
 - ✓ up to 5 Gbps data rate for high mobility users
 - ✓ up to 50 Gbps data rate for low mobility user
 - ✓ 10 times higher battery life time of connected devices
 - ✓ 5 times reduced End-to-End (E2E) latency
- **New Business Model for Future IMT**
 - ✓ Network As a Service (NaaS)
 - ✓ Data As a Service (DaaS)
 - ✓ Knowledge As a Service (KaaS)

15



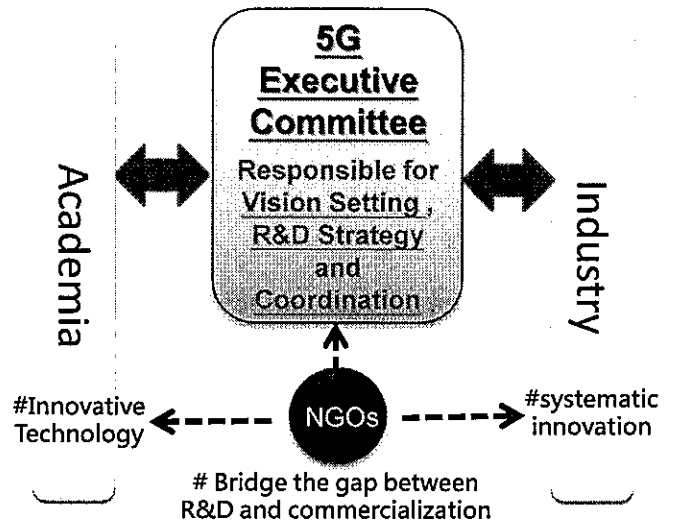
Source : WIT Club · 2013/10

- Target: Drive industrial transformation, enhance the independence and autonomous for the industry and establish the new engine of growth for Taiwanese ICT industry.
- Launch TW 5G Initiative Program in 1H14
- TW 5G Initiative Program will focus on 6 aspects, including R&D、Industry Promotion、IP Monitoring、International Cooperation、Human Resource
- With an aim to promote international cooperation and enhance our proposal capabilities of industry standards

16

- Analyze the application scenarios from different aspects such as Antenna, Baseband, Network Structure, and User Experience to explore the 5G new technology possibility
- Construct 5G prototype system as a trial platform and attract international research alliance to launch co-developing opportunities
- Academia takes the responsibility of 5G advanced technology development, and industry should utilize the results derived from academia to invest in the R&D of systematic innovation of products, processes, and services.
- As for NGOs, they should bridge the gap between R&D and commercialization of innovative technology.

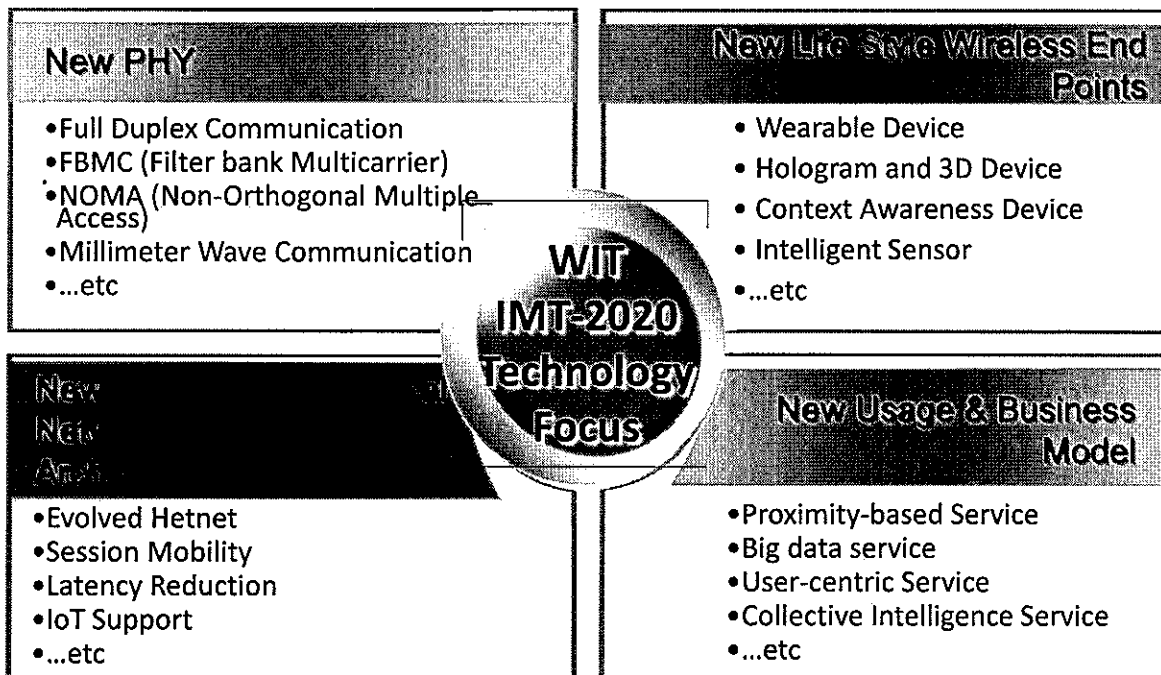
Source : WIT Club · 2013/10



TW 5G Technology Exploration Structure From WG 1-WG8

Include research topics on scenarios & requirements, antenna technology, new radio & spectrum, HetNet SON, backhaul, cloud RAN, testing & trial, etc.

17



Source : WIT Club · 2013/10

- Taiwan's Next-Gen telecommunications technology development will focus on New PHY, Internet integration using SDN, and smart devices with all kinds of sensors in life
- Technology development shall couple with innovative business models and application scenarios to make UX become the core idea for design

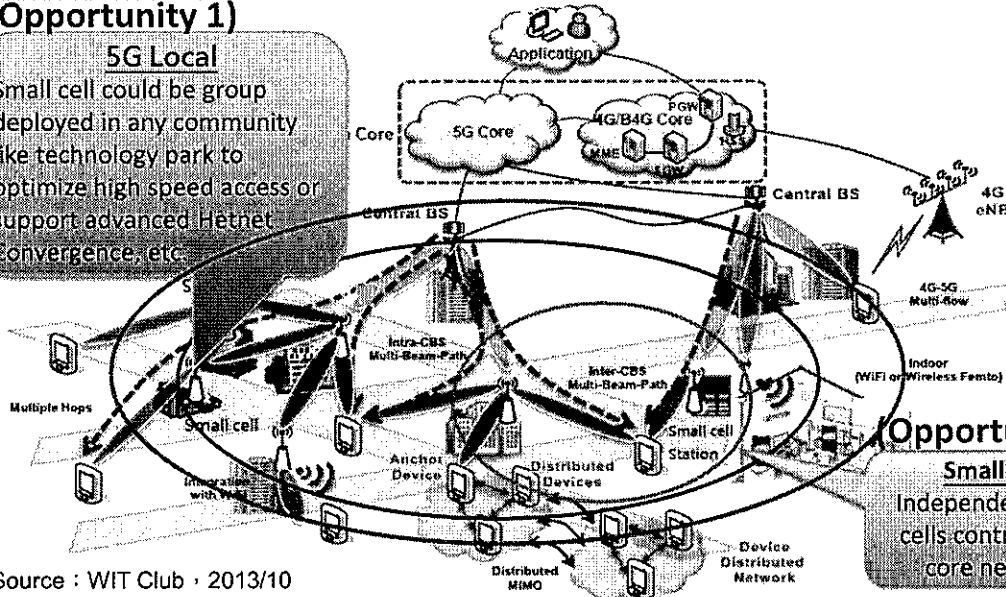
18

Product/Service Vision: 5G Local Network Evolution

The trend of small cells & local network is tailor-made for Taiwan Industry Structure

(Opportunity 1)

5G Local
Small cell could be group deployed in any community like technology park to optimize high speed access or support advanced Heterogeneous Convergence, etc.



(Opportunity 2)

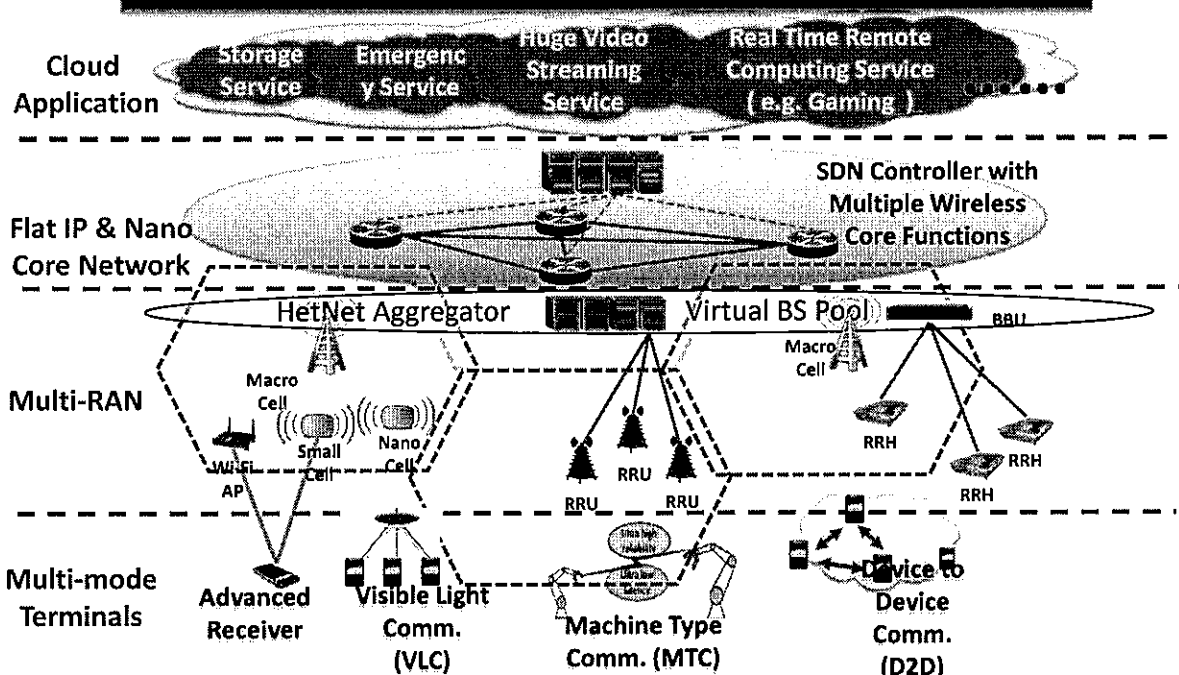
Small Cell
Independent small cells controlled by core network

Source : WIT Club · 2013/10

- In order to enter Core Network and Macro Station Market, it requires successful business models and good relationship with operators.
- 3GPP has launched the research on LTE Local since 2012. With the developing experiences of WIMAX and Small Cells, 5G Local could be a cutting-edge technology for the purpose of energy efficiency and miniaturization of traditional base stations.

TW-5G Prototype System Architecture

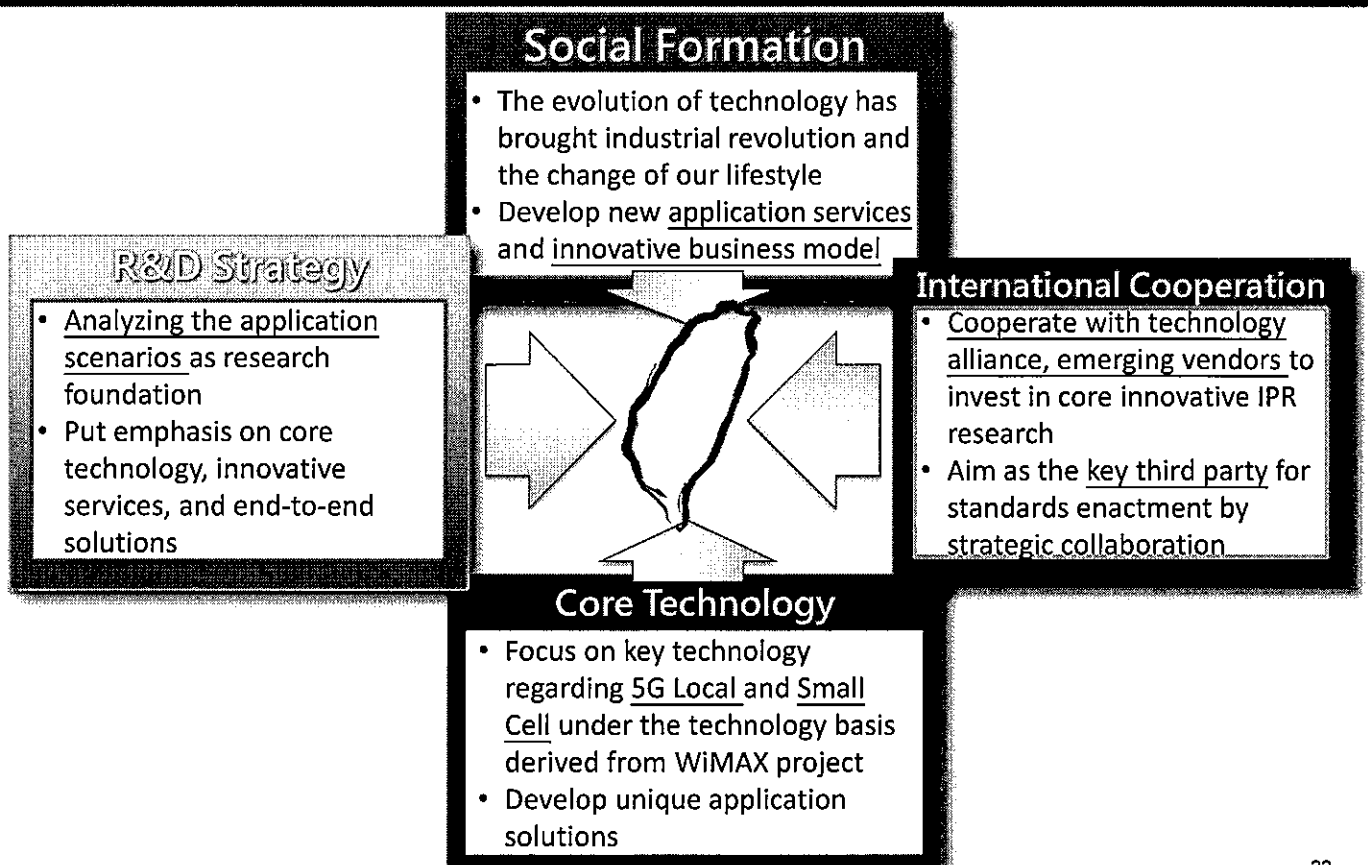
Vision: Low Latency, High Data Rate, and Seamless Access



- TW-5G prototype system will cover diversified devices with more elastic network management mechanism
- It will bring more applications in real-time, high-speed situations, such as Wi-fi Access at HSR, infrastructure in remote counties, and mobile surveillance.

- Taiwan Policy Practice on Broadband Wireless Communication
- 5G Development Framework in Taiwan
- Conclusion

21



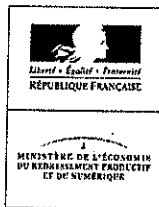
22

Thank You!

Huann-Shiuh Shy

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886-2-25432538#108



5G Technologies, French Approach

12 June 2014, Paris



direction générale de la compétitivité
de l'industrie et des services

4. 5G mobile services

- **5G : Next generation of communication networks and services :**
 - ubiquitous super-fast connectivity and seamless service delivery in all circumstances,
 - with converging capabilities for both fixed and mobile accesses.
- **France puts an emphasis on 5G in "Plan souveraineté télécom" :**
 - one of the 34 industrial plans
 - Aim : *organizing* a coherent French consortium at the European level for the European PPP
- **17 Dec. 2013 : the European 5G Infrastructure Public private partnership (PPP) was created :**
 - Contract signed by the European Commission and an association from the ICT sector
 - The association includes 30 Full Members selected from the NetWorld2020 ETP (European Technology Platform)
 - Among which (FR) : Alcatel Lucent, Astrium Satellites, Orange Labs, Thales Alenia space
 - Possible Contribution via Associate members



direction générale de la compétitivité
de l'industrie et des services

4. 5G mobile services

- **This PPP programme :**
 - focuses on infrastructure, and
 - should deliver solutions, architectures, technologies and standards for the ubiquitous 5G communication infrastructures of the next decade.
- **Key Challenges :**
 - Providing 1000 times higher wireless area capacity and more varied service capabilities compared to 2010
 - Saving up to 90% of energy per service provided. The main focus will be in mobile communication networks where the dominating energy consumption comes from the radio access network
 - Reducing the average service creation time cycle
 - Creating a secure, reliable and dependable Internet
 - Facilitating very dense deployments of wireless communication links
 - Enabling advanced User controlled privacy
- **Private side has committed to reach agreed KPIs (key performance indicators) for each Key challenge.**

4. 5G mobile services

- **Funded by 700 million euros 2014-2020 from R&D European Union budget**
 - Commitment of 700 additional million euros from the Industry
 - The PPP projects are selected by the Commission
 - opened calls for proposals
 - independent evaluators select proposals based on 3 criteria (scientific and technological excellence, impact and implementation)
 - In 2014 : 125 million euros for R&D
 - The activities also include experimentations, test beds and large scale deployment activities after the R&D phase, as well as standardization.
- **The Commission also promotes the PPP as a policy support for European coordination in areas such as :**
 - standardization,
 - frequency policy,
 - international cooperation.