



# Development trends of Taiwan Geriatric Healthcare Industry

錢宗良

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CEO, Institute for Biotechnology and Medicine Industry



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the file of talk

# OUTLINES



- 1. Institute for Biotechnology and Medicine Industry (IBMI)**
- 2. Total Solutions for the Smart healthcare**
- 3. Geriatric Healthcare industry in Taiwan**

# About IBMI

Institute for Biotechnology and Medicine Industry (IBMI) is an independent, not-for-profit organization voicing Taiwan-based healthcare industry, promoting interdisciplinary collaborations through its global platform, and creating policy dialogues between public and private sectors. On top of that, IBMI is also a trusted awarding and certification body to healthcare providers and an incubator to health care startups in areas of novel biotechnologies, services and innovations.



**Founder**  
**Jin-Pyng Wang**

Former president of  
the Legislative Yuan,  
Taiwan



**President**  
**Chi-Huey Wong**

Scripps Family  
Chair Professor of  
the Scripps  
Research Institute



**Vice President**  
**Barry Lam**

Chairman & CEO  
Quanta Group



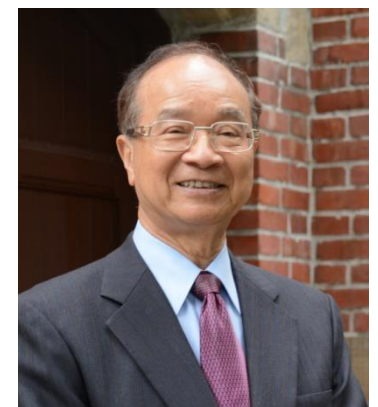
**Vice President**  
**Pan-Chyr Yang**

Academician of  
Academia Sinica



**Vice President**  
**Chang-Hai Tsai**

Chairman of the  
Board of China  
Medical University  
& Health Care  
System



**Supervisor**  
**Wei-Jao Chen**

Professor Emeritus,  
Department of  
Surgery. National  
Taiwan University  
College of  
Medicine

# About IBMI

The board members consist of leaders from hospitals and R&D institutes, and C-level representatives from electronics, ICT, biotech and pharmaceutical sectors. Currently, IBMI has more than 400 members from across industries relating to healthcare.

## Healthcare

### Chang Gung Memorial Hospital

Changhua Christian Hospital  
China Medical University Hospital  
College of Medicine, National Taiwan University  
Hualien Tzu Chi Hospital  
Kaohsiung Medical University Hospital  
MacKay Memorial Hospital  
National Cheng Kung University Hospital  
National Defense Medical Center  
Shin Kong Wu Ho-Su Memorial Hospital  
Show Chwan Memorial Hospital  
Taichung Veterans General Hospital  
Taipei Medical University  
And more.

## R&D

Development Center of Biotechnology  
Industrial Technology Research Institute  
KPMG in Taiwan  
National Health Research Institutes



## Electronic & ICT

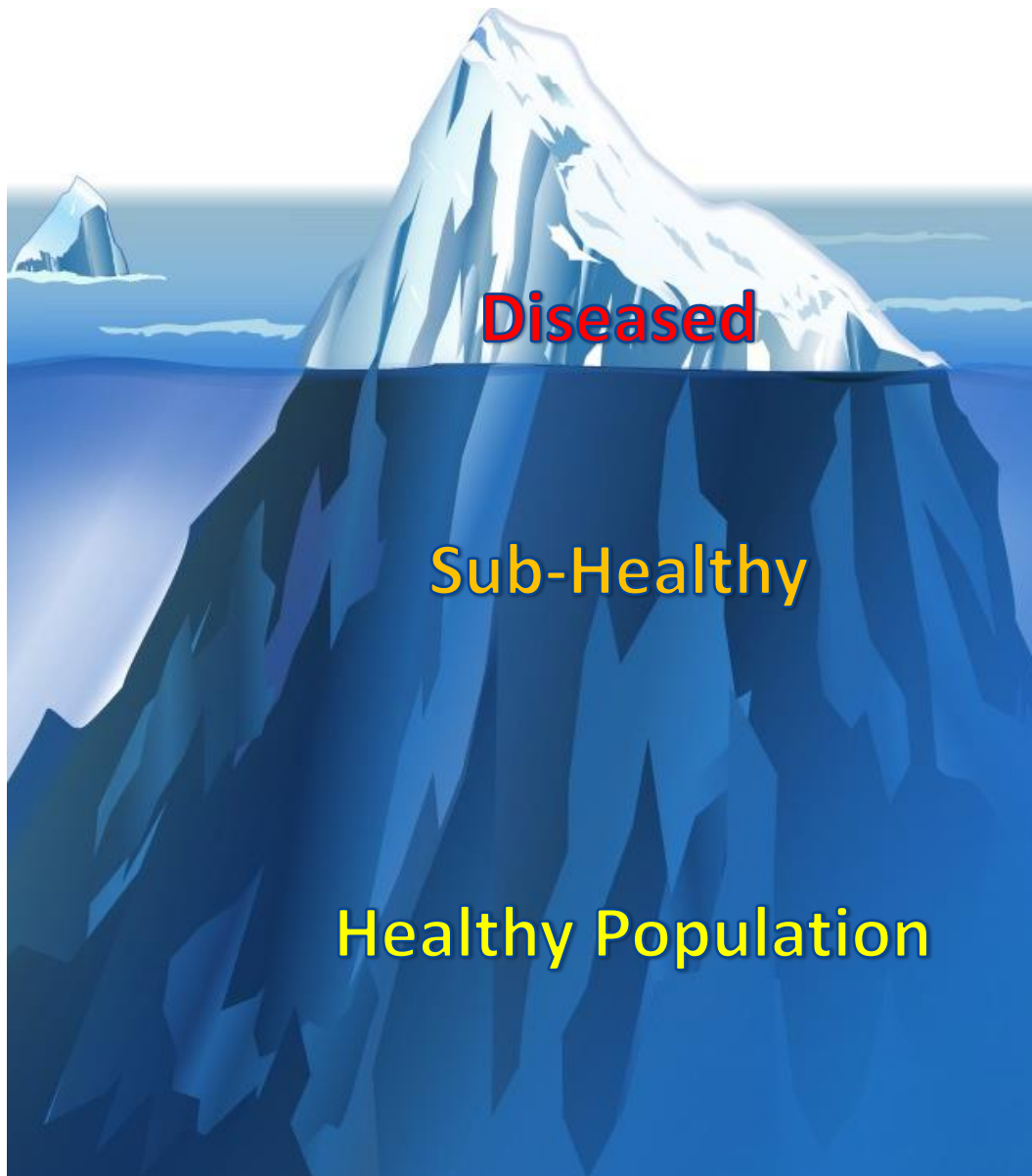
Advantech Co., Ltd.  
Catcher Technology Co., Ltd.  
Foxconn health technology business group  
iKala Interactive Media Inc.  
Pegatron Corp.  
Powerchip Semiconductor Manufacturing Corp.  
Qisda Corp.(BenQ)  
Realtek Semiconductor Corp.  
Topco Group  
Wistron Corp.

## Bio-Pharmaceutical

Bora Pharmaceuticals Ltd.  
Maywufa Biopharma Group  
Missioncare Medicine Co. Ltd.  
St.Shine Optical Co., Ltd.  
CHC Healthcare Group  
Orient Pharma Co., Ltd.



# Precision Medicine and Precision Health



## 【Precision Medicine】

**Precision Diagnosis :** NGS, Liquid Biopsy, Medical AI, POC devices , Digital Imaging Equipment *etc.*

**Precision Treatment :** Targeted Therapy, Cell Therapy, Immunotherapy, Surgical Robot, *etc.*

**Medical Care:** Smart Hospital, Smart healthcare, *etc.*

## 【Precision Health】

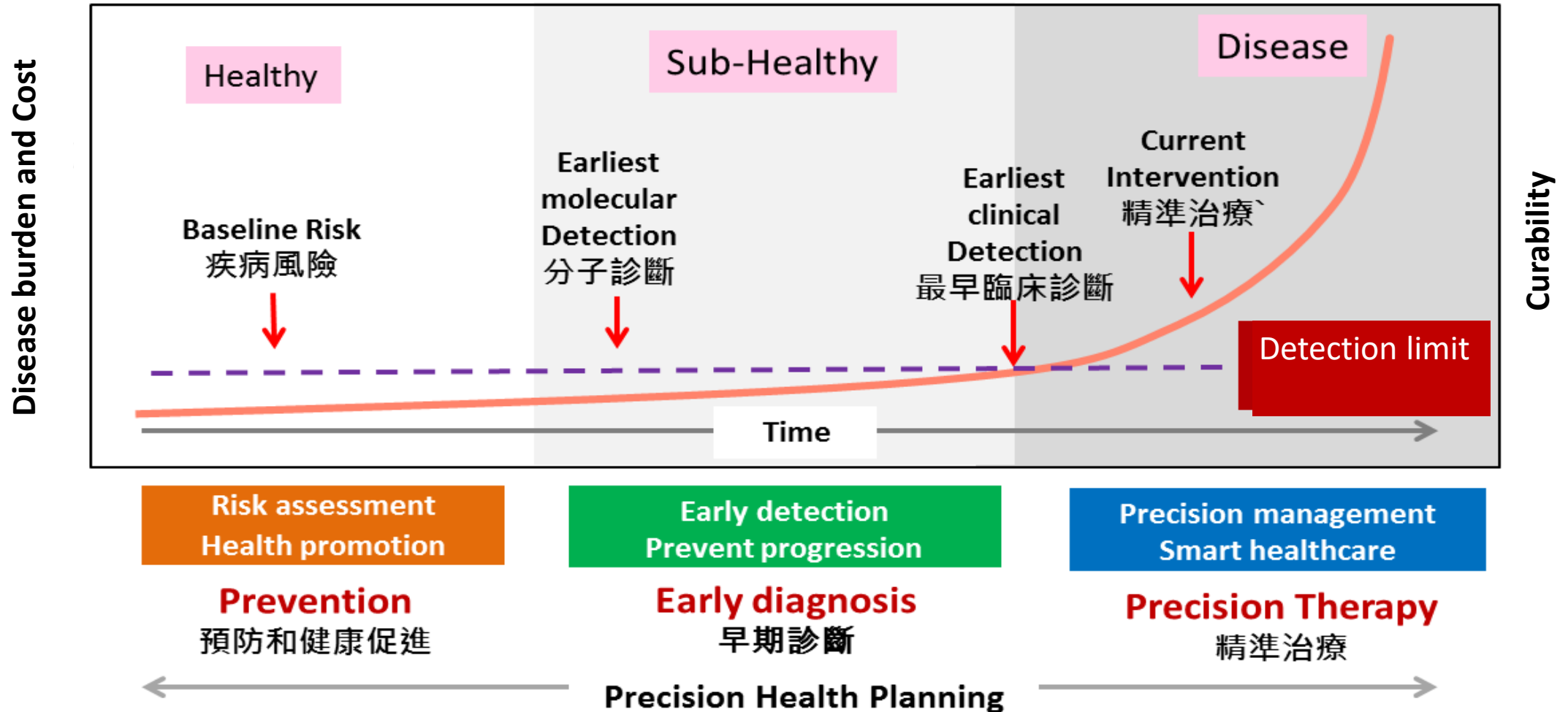
**Risk Assessment :** Genetic risk, Behavioral Patterns, family history *etc.*

**Precision Prevention :** Personalized Health Check 、 AI for Early Detection, Home Screening, Tele Health Consulting Services *etc.*

**Health Promotion:** Lifestyle, Environmental Adjustments, Personalized Diet, Sport and Exercise, Microbiota, Homecare and Wearable Devices, Health Management, *etc.*

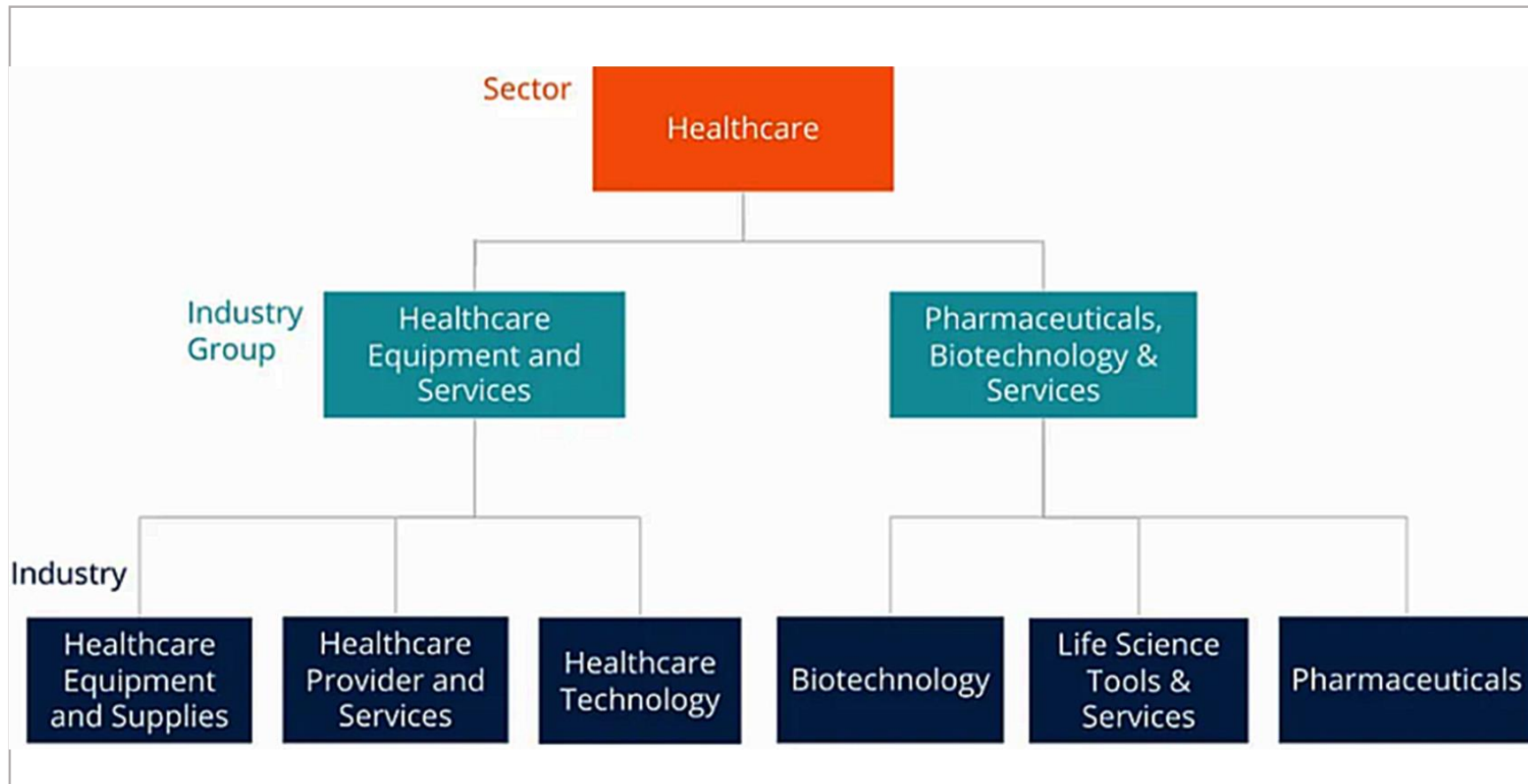
# Healthcare from disease treatment to prevention

- Healthcare nowadays provides individuals with products and services ranging from prevention, health promotion, diagnosis to treatment.



# Healthcare sector by GICS definition

- ❑ The healthcare sector includes the following subsections, as per Global Industry Classification Standard (GICS)



## Global Markets:

- International Healthcare
- Bio-pharmaceutical
- Medical device
- Regenerative medicine
- Smart healthcare
- Precision medicine
- Sports medicine

# ABOUT TAIWAN

**Goal: Keep Healthy without the need of Long Term Care**



Population  
**23.3 million**



Area  
**36,197 km<sup>2</sup>**



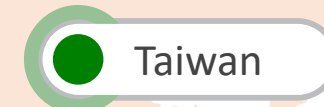
GDP & GDP/capita  
**761.4 billion & 32,756 (USD)**



Life Expectancy & Healthy Life Expectancy  
**80.9 & 73.3 years (7.6 years unhealthy)**



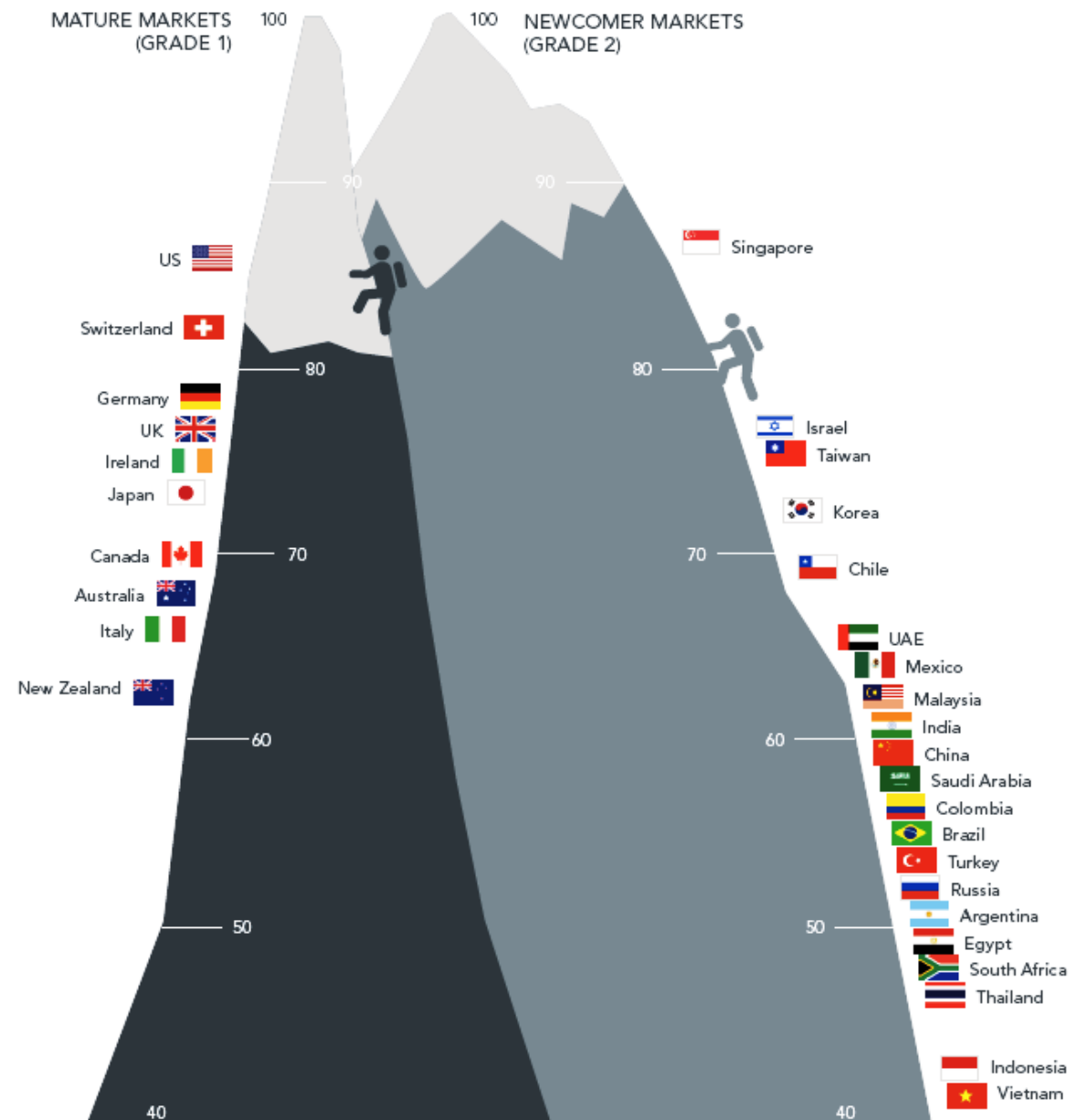
Physicians Ratio  
**2.23 per 1,000 Population**





# Taiwan Core Competences

- Taiwan ranks 3rd in the newcomer markets
- World-class quality of medicine and talent
- The best healthcare system and big data
- High quality clinical trials and R&D capacity
- Well-established research infrastructure
- ICT supply chain, talent and manufacturing
- AI and 5G R&D in national level



Source compiled by IBMI, RBMP (2021)

# Medical Innovation by cross-industry collaborations



**Advanced Medical Care**



**High Quality R&D and MFG**



**Strong ICT and Elec. Tech.**



# Taiwan ICT companies setting foot in healthcare

	Mobile health	Medical equipment	Smart hospital	Gene/cell therapy	Biomedicine	
Companies	<div>acerCOMPAL</div> <div>FOXCONN</div> <div>Quanta ComputerTULhtc</div> <div>ASUSCoretronic</div> <div>LEADTEKMITAC</div>	<div>BenQ</div> <div>Qisda</div> <div>K LASER TECHNOLOGY INC</div> <div>LARGANLITEON</div> <div>wistro5XLIX</div> <div>DELTA</div> <div>RITEK</div>	<div>wistron</div> <div>Quantia Computer</div> <div>MITAC</div> <div>BenQ</div> <div>Qisdahtc</div> <div>ADVANTECH</div> <div>iEi GROUP</div> <div>威強電集團</div> <div>英業達Inventec</div> <div>avalue Technology Inc.</div>	<div>FOXCONN</div> <div>acer</div> <div>MetaTech</div> <div>COMPAL英業達</div> <div>Inventec</div> <div>wistron</div>	<div>UMC</div> <div>Powerchip 力晶科技</div> <div>MEDIA/TEK</div> <div>REALTEK</div> <div>TUL</div> <div>LEADTEK</div>	
Product pipelines	<div>■Telehealth</div> <div>■IoT solutions</div> <div>■Wearables</div> <div>■Health management</div>	<div>■X ray / ultrasound</div> <div>■Micro CT</div> <div>■Surgical / service robots</div> <div>■Capsule endoscopy</div> <div>■Hemodialyzer</div> <div>■Molecular pathology</div> <div>■Vital sign monitor</div>	<div>■Smart ward/operating room</div> <div>■Surgical VR</div> <div>■AI solution</div> <div>■HMS</div> <div>■EMR / EHR</div> <div>■Medical display</div>	<div>■DNA sequencer</div> <div>■DNA microarray</div> <div>■Protein &amp; genetic testing</div> <div>■CTC system</div> <div>■Cellular therapy</div>	<div>■AI chip</div> <div>■Biochip for gene sequencing</div> <div>■RF &amp; Wireless chip</div> <div>■Biosensor</div> <div>■Display component</div> <div>■Organic semiconductor</div>	
Areas of application	<div>IoT</div>	<div>5G</div>	<div>AI</div>	<div>VRAR</div>	<div>CLOUD COMPUTING</div>	<div>BLOCKCHAIN</div>



# Cross-industry cooperation at a glance



- 1) AI medical platform
- 2) Telemedicine / remote care
- 3) AI-assisted arrhythmia diagnosis
- 4) AIoT device/equipment



- 1) Genome database for Chinese
- 2) Medical wearables
- 3) Epidemic management products
- 4) Proton therapy / 8K medical imaging



- 1) Innovative devices / AI diagnostics
- 2) Health & chronic disease management
- 3) Medical imaging for animals
- 4) Cell therapy / AIoT solutions



- 1) Miniaturization of medical equipment
- 2) Exoskeleton / assistive devices
- 3) AI dialysis / medical AI imaging
- 4) Digital pathology / health management

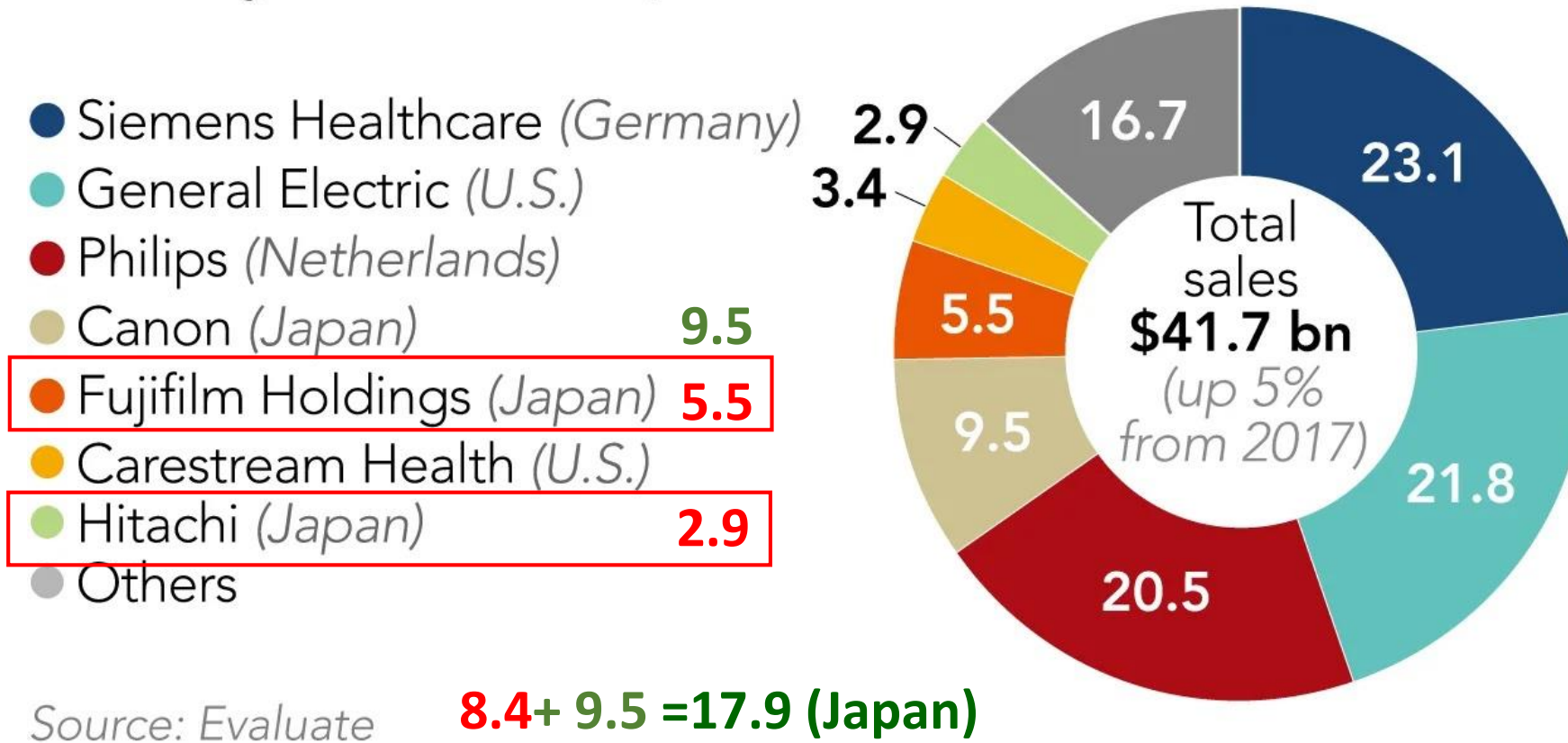


- 1) Telehealth / IoT products
- 2) Auto detection of CTC
- 3) Data integration of sports health
- 4) AI-assisted detection of disease



# Fujifilm Healthcare acquires Hitachi Diagnostic Imaging in 2021

## Diagnostic imaging equipment global market share by sales (2018, in percent)



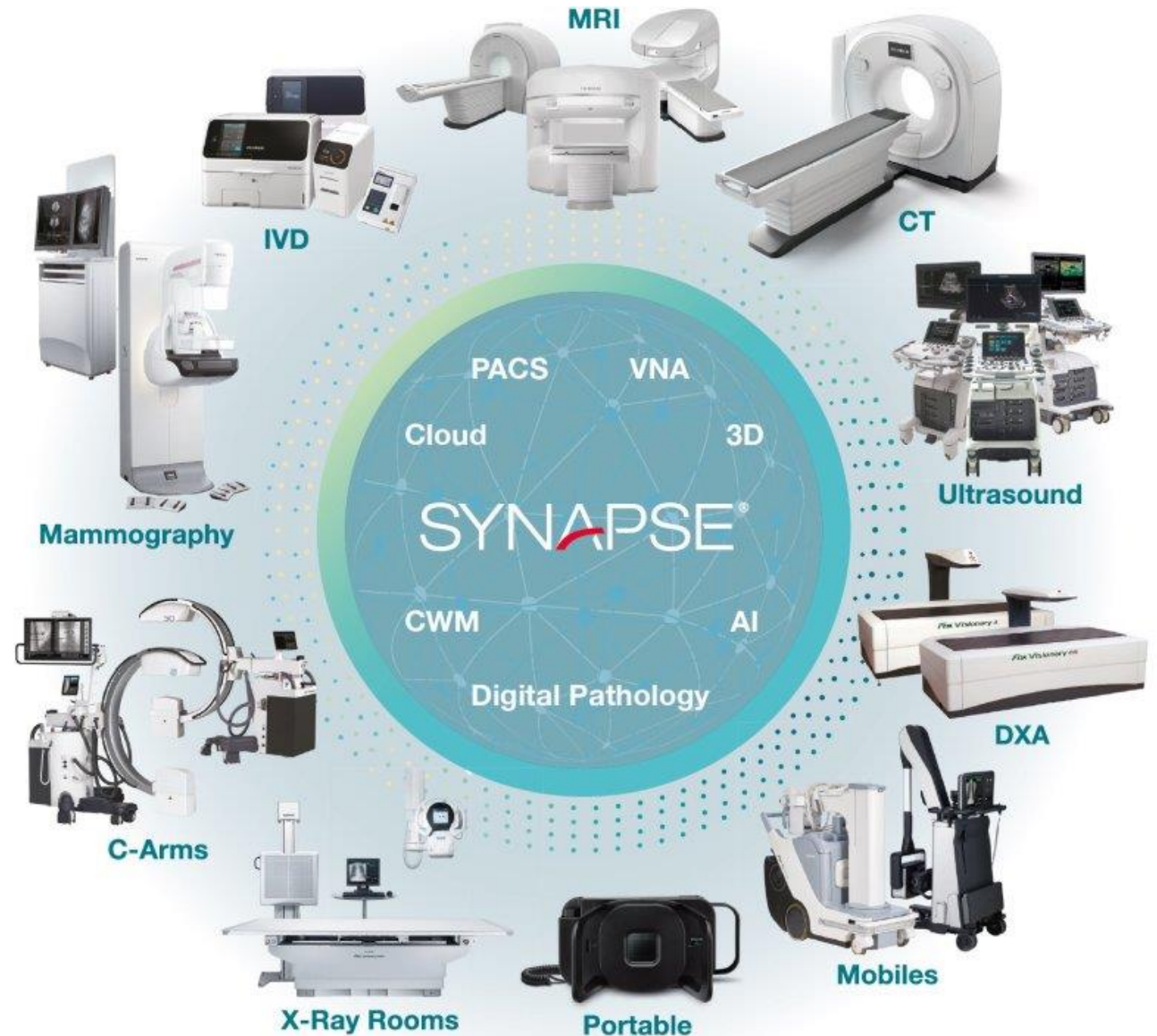
*Fujifilm Healthcare presented a complete and integrated portfolio of diagnostic products and services, including CT, MRI, X-ray, AI, PACS, endoscopy and ultrasound systems.*

# Fujifilm “One-Stop” solution partner for the Healthcare systems

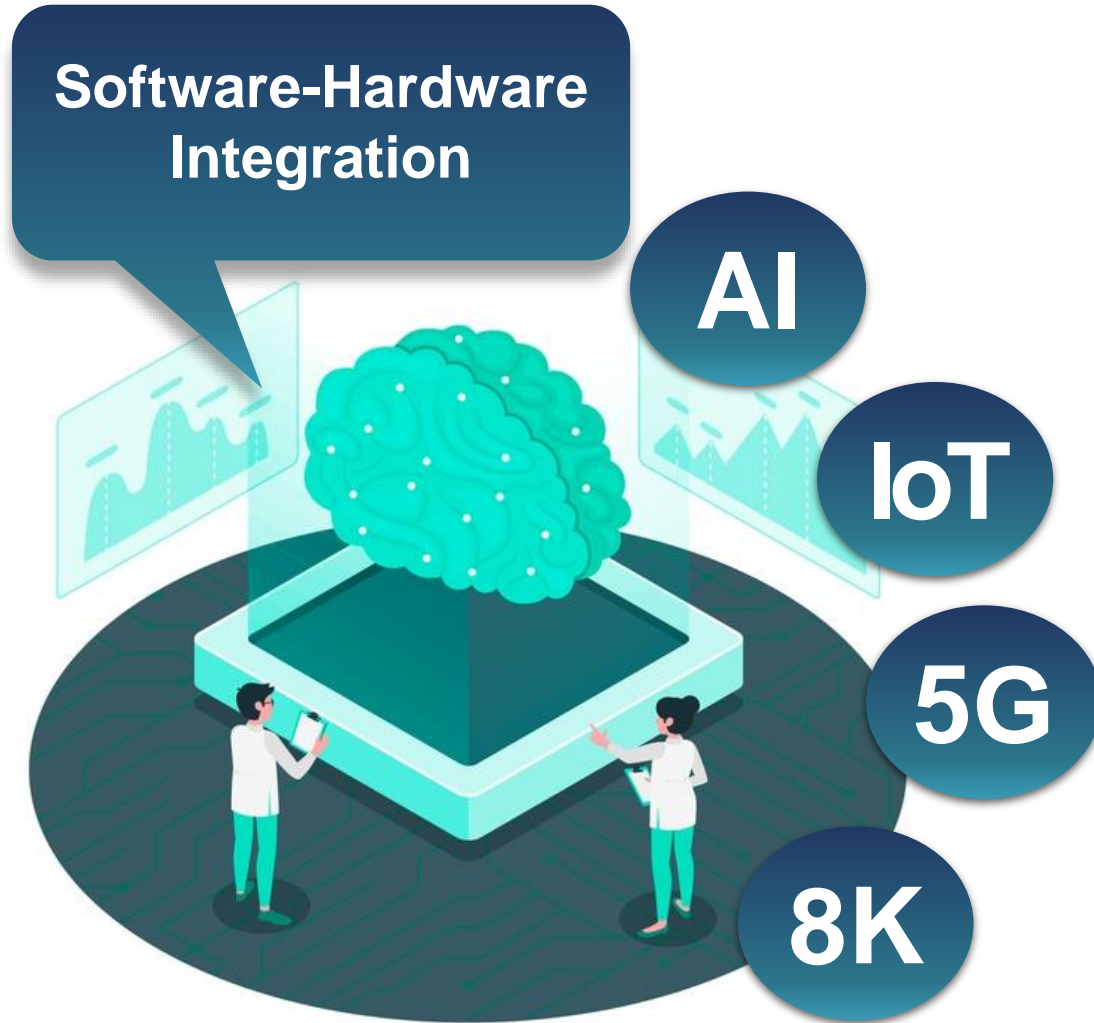


Fujifilm has a wide range of products including diagnostic X-ray imaging equipment, ultrasound systems, endoscopy, in vitro diagnostics, CT, MRI, and by positioning medical informatics as an open platform, the company can offer a wide variety of solutions to healthcare systems.

*Image source: Fujifilm*



# Game-Changing Technology in Healthcare

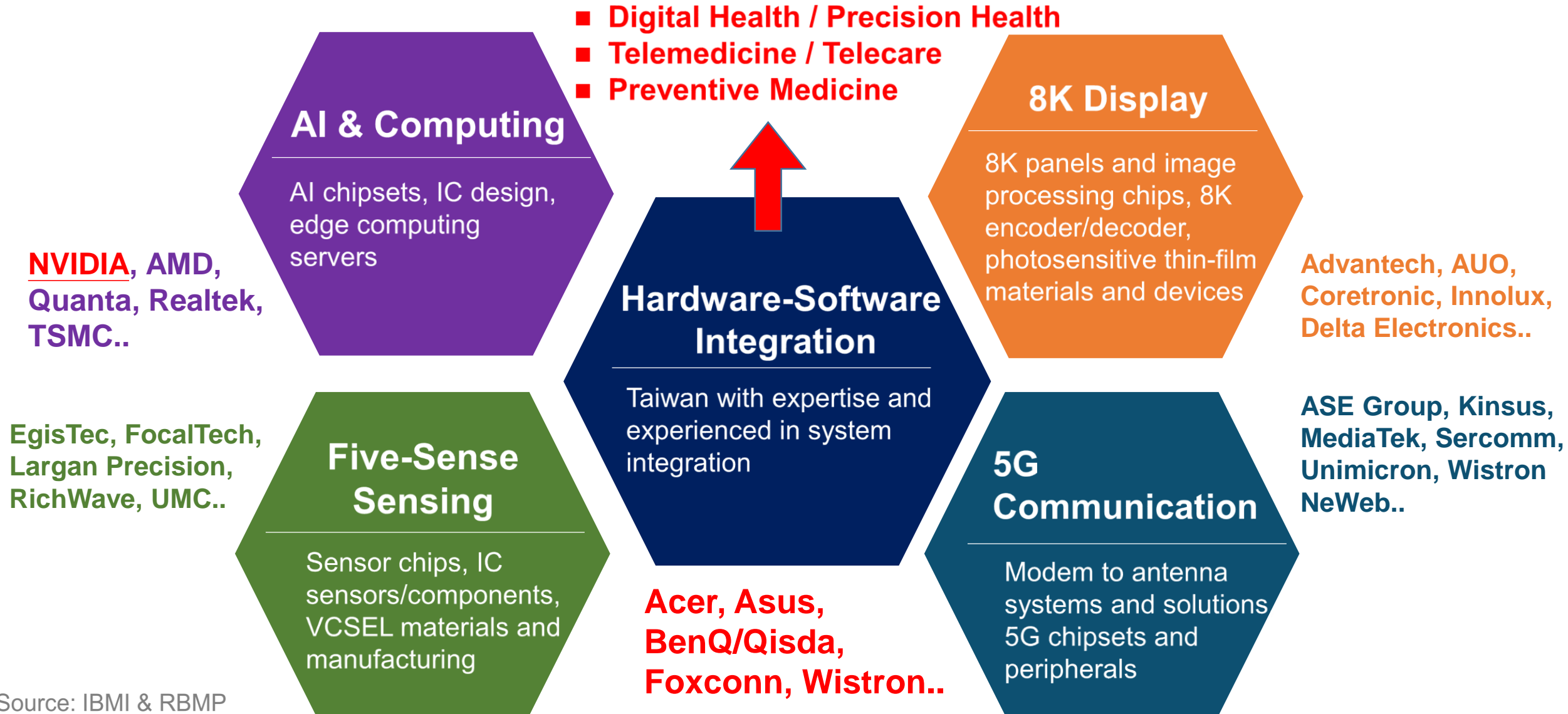


Taiwan houses global players and supply-chain partners in the following areas:

- **Software hardware integration**
- **AI** chip making, AI computing & servers
- **IoT** sensors and components
- **8K** display and 8K image technology
- **5G** telecommunication chips and peripherals

# Taiwan Industry Overview

## Market Players and Focus Areas



Source: IBMI & RBMP



# Taiwan Industry Overview

## Successful Solutions

### Acer



### VeriSee DR

- The AI-powered software is designed to detect diabetic retinopathy (DR) by analysing retinal images.
- Approved in Taiwan, Thailand and Indonesia, VeriSee DR requires no internet connection, can be customised and seamlessly integrated into clinical workflow.

### TeleMed for Home Care & Point of Care

- The solution provides a non-contact outpatient service which simulates the workflow in clinical practice for patients and clinicians.
- It is intended to improve efficiency and quality of telecare/remote care/long-term care and enhance the pandemic prevention measures.



# Taiwan Industry Overview

## Asus

## Successful Solutions

**全球首創 MRI腫瘤分類及乳癌復發預測系統**




- 非侵入式  
免除切片 0痛苦
- 節省93%檢驗時程  
即早治療
- 精準腫瘤分類  
輔助醫生治療規劃
- 乳癌復發風險預測  
低風險患者免化療之苦

### MRI Tumour Classification and **Breast Cancer** Reoccurrence Prediction System

The software analyses 3D images during a screening breast MRI, assisting radiologists recognise the location of tumours, classify them as well as evaluating recurrence risk with PAM50 (Prediction analysis of microarray 50).

### EndoAim **AI** Endoscopy Lesion Detection System

The software is intended to assist clinicians to analyse polyps during a colonoscopy and classify them into non-adenoma or adenoma.

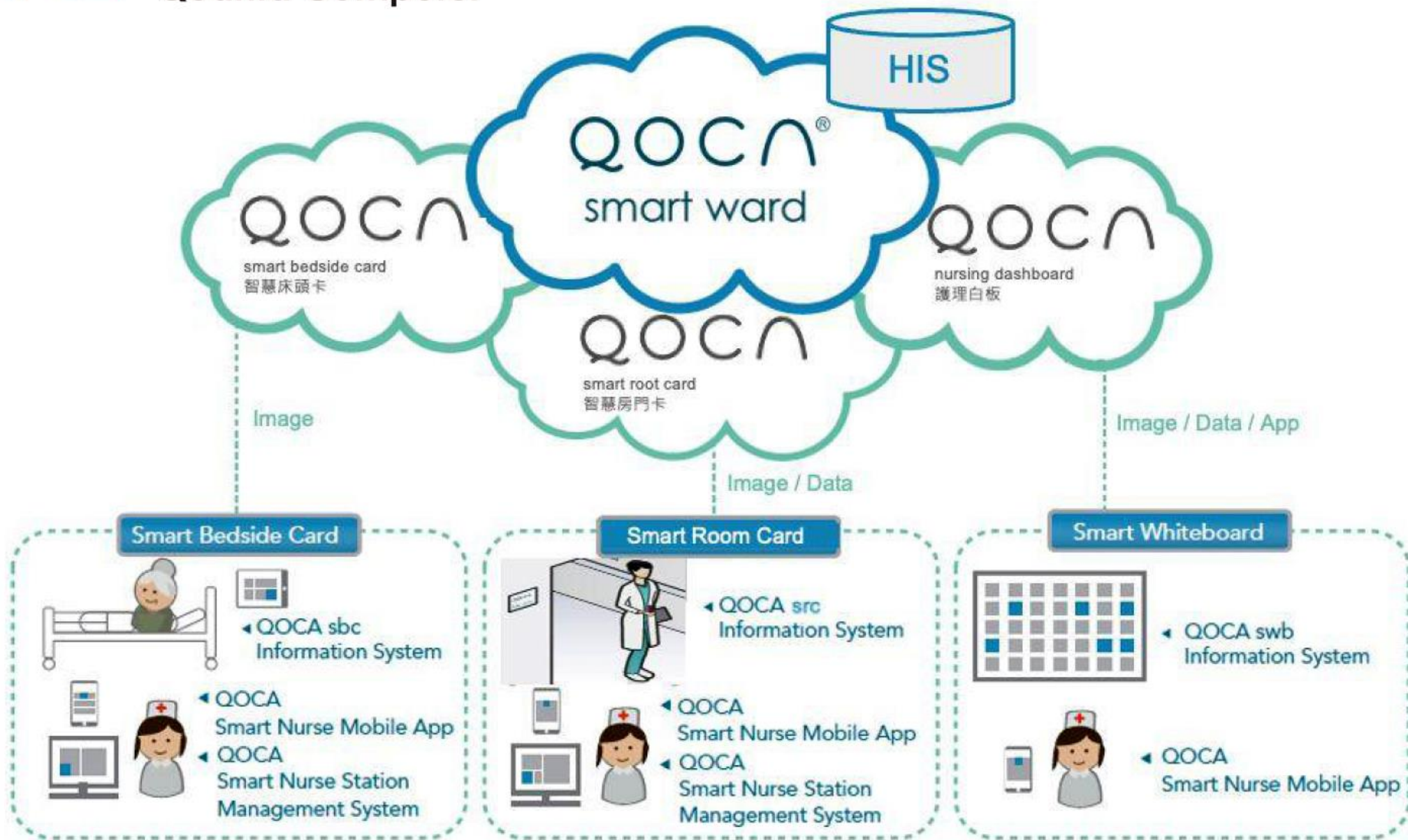


- 即時警示  
病灶不遺漏
- 超過90%精準度  
降低誤判
- 即時息肉分類  
提供診斷參考



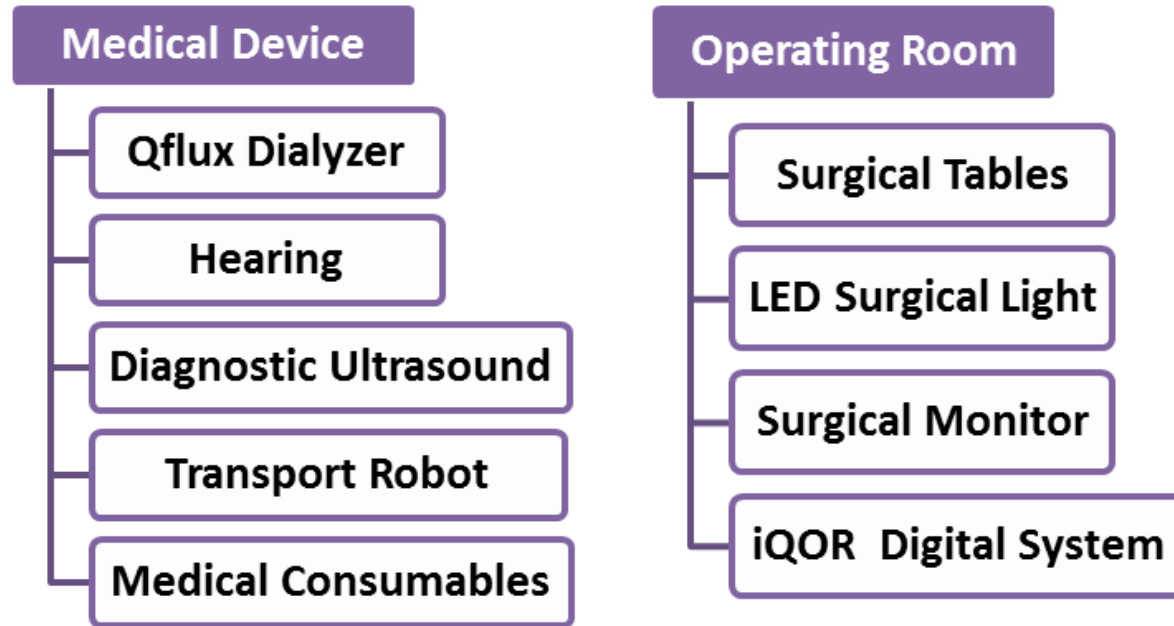
廣達電腦  
Quanta Computer

QOCN®





## Featured Products



## Solutions

### Smart Operation Room



ODM / OEM of  
Medical Device

---

## Other Smart Healthcare Solutions

Fitness System

Smart Wearables

Smart Ward

Health Management System

Long-Term Care Monitoring Solution



### Featured Products

Medical Carts



Medical Computers



Medical Tablets



Medical Monitor

Surgical Monitor

Diagnostic Monitor

Clinical Monitor

Intelligent Power System

Medical Power  
Storage System

Smart Battery Kit

Intelligent Power  
Storage System

### Smart Hospital Solutions

Medical Workstation

Smart Ward

Smart Clinic

Smart Nurse Station

Medication  
Administration

Telehealth  
Applications

# Smart Ward: Bedside Infotainment System

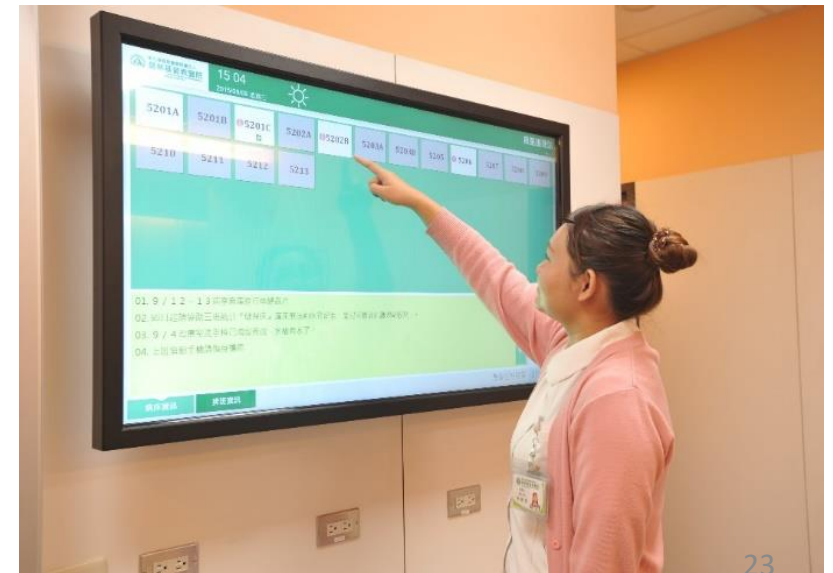
- ◆ Interactive environment
- ◆ Disclosure real-time information
- ◆ Treatment schedule



# Smart Nurse Station: Nurse Dashboard

## Improvement Nurse Care Quality and Work Flow

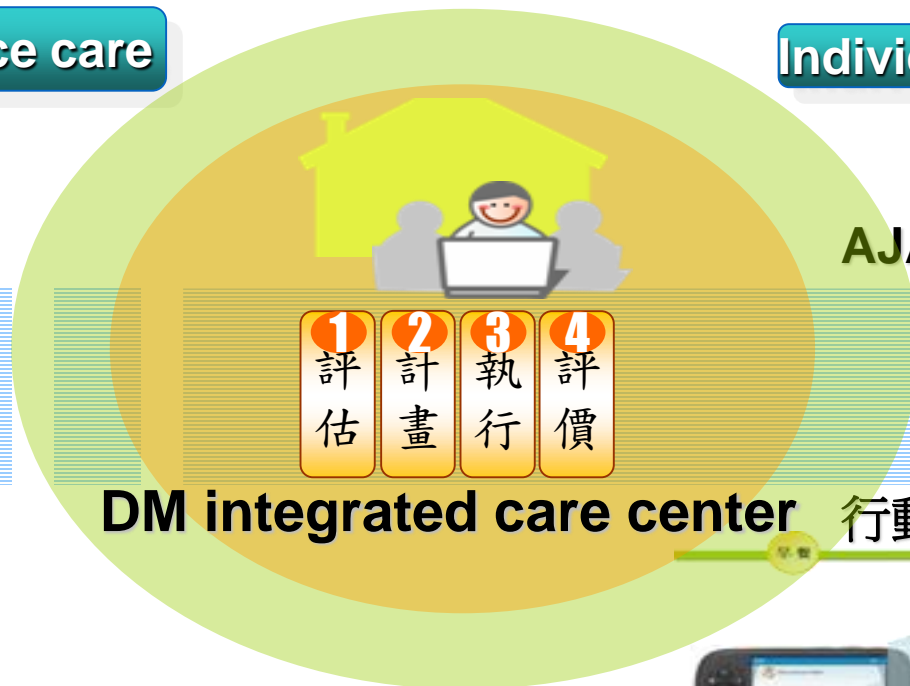
- Nurse dash board (No paper works)
- Real time patient information (location, activity, schedule )
- Real time nursing shifting
- Central nurse control panel
- Schedule, Work Flow, and Education



# Telecare: Diabetes Integrated Health Care Center

Hospital visit /Long-distance care

Individualized devices



AJAX動態網頁流覽

回傳

收集

病患

病患家屬

行動、藍芽健康照護手機

個人化

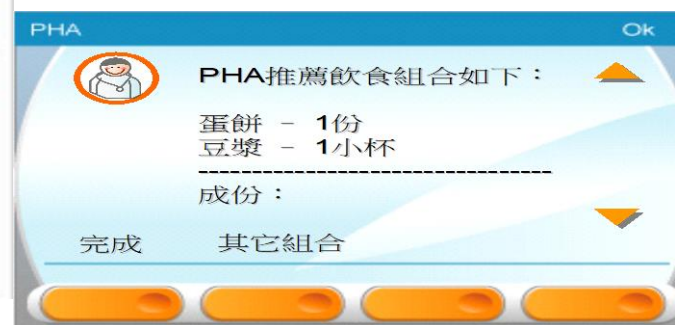
建議

提醒

動態性

互動

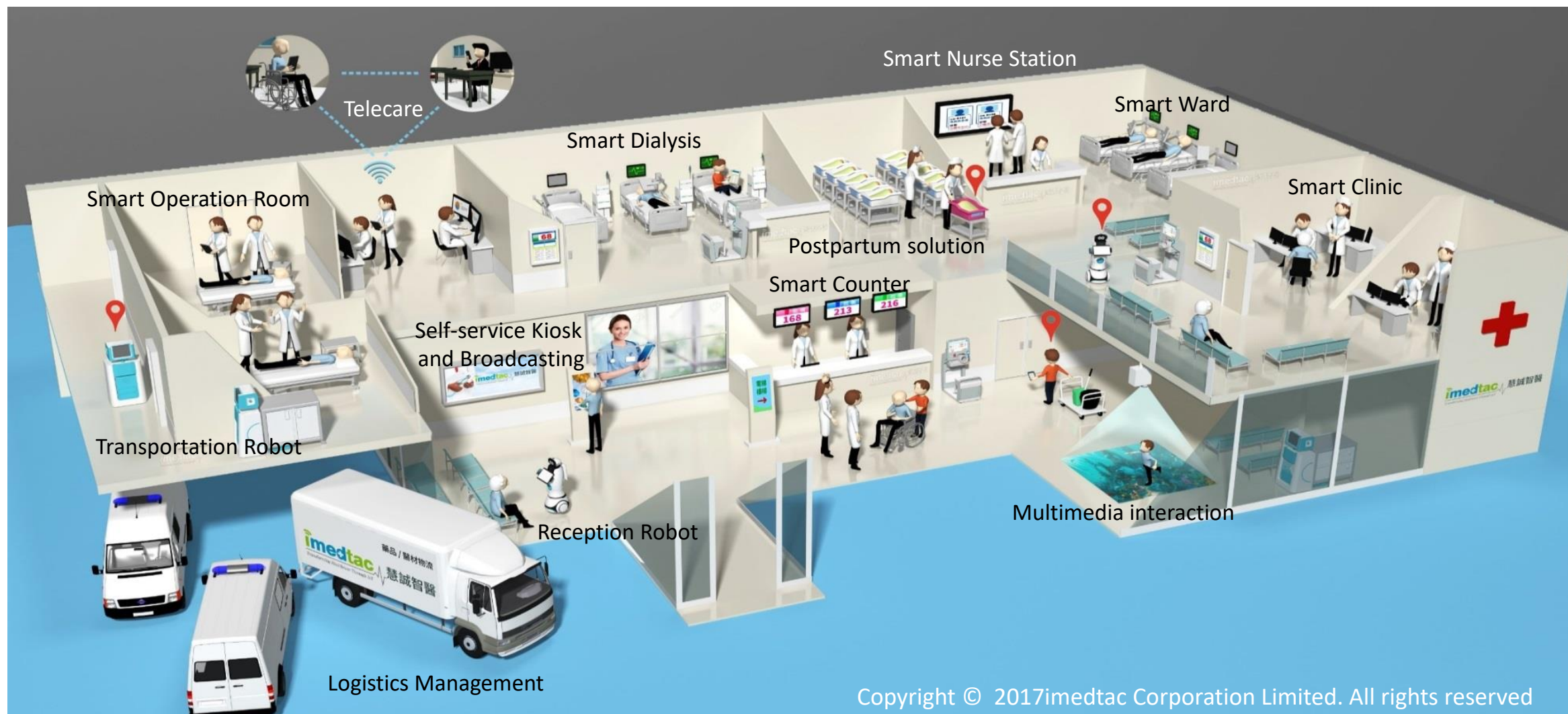
立即性





# Integrated Solutions in Smart Hospital

Modularize IoT for Hospital and Healthcare Application by **imedtac** 慧誠智醫



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# OUTLINES

1. Institute for Biotechnology and Medicine Industry (IBMI)
2. Total Solutions for the Smart healthcare
3. **Geriatric Healthcare industry in Taiwan**



## Age-tech industry action plan

### ✓ Expand markets for aging adults

Health and wellness industry revenue to exceed NT\$300 billion by 2025

### ✓ Spread digital empowerment

Boost seniors' social engagement and economic activity

### ✓ Upgrade effective care

Introduce technologies to reduce caregivers' burdens

### ✓ Integrate care services

Consolidate service networks through digital connections



2023-09-28

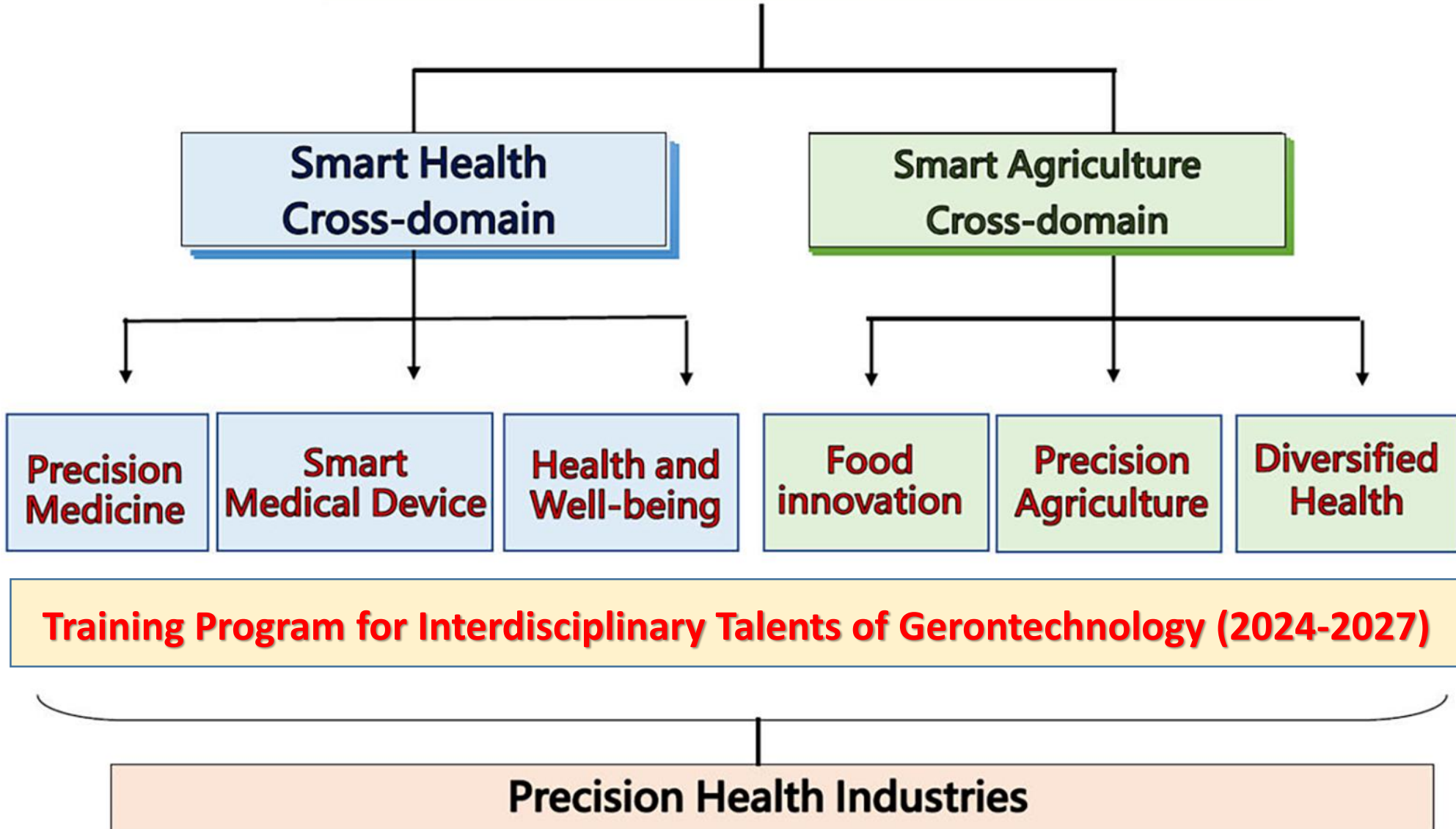




# 精準健康產業跨領域人才培育計畫

Training Program for Interdisciplinary Talents of Precision Health

2022-2025







教育部

資訊及科技教育司

# 高齡科技產業跨領域人才培育計畫

Training Program for Interdisciplinary Talents of Gerontechnology

## Partner University

臺北醫學大學

Taipei Medical University

長庚大學

Chang Gung University

國立宜蘭大學

National Ilan University

國立中興大學

National Chung Hsing University

國立中興大學

National Chung Hsing University

中山醫學大學

Chung Shan Medical University

## Promotion Center

國立臺灣大學（醫）

National Taiwan University

國立臺灣大學（農）

National Taiwan University

國立臺灣海洋大學

National Taiwan Ocean University

國立中興大學

National Chung Hsing University

國立成功大學

National Cheng Kung University

高雄醫學大學

Kaohsiung Medical University





第一屆

# 高齡健康產業博覽會

Healthy Ageing Tech Show

Exhibition Dates: **Aug. 2 (Fri) - Aug. 4 (Sun), 2024**

Venue: **Taipei World Trade Center Exhibition Hall 1**

Exhibition Scale: **800 booths Exhibition**

To Establish Taiwan Ecosystem for Elderly Health

To Integrate Smart Services, Healthcare, and Happy Living for Seniors!

台灣·走向更健康的超高齡社會!



## 台灣- 走向更健康的超高齡社會

賴總統

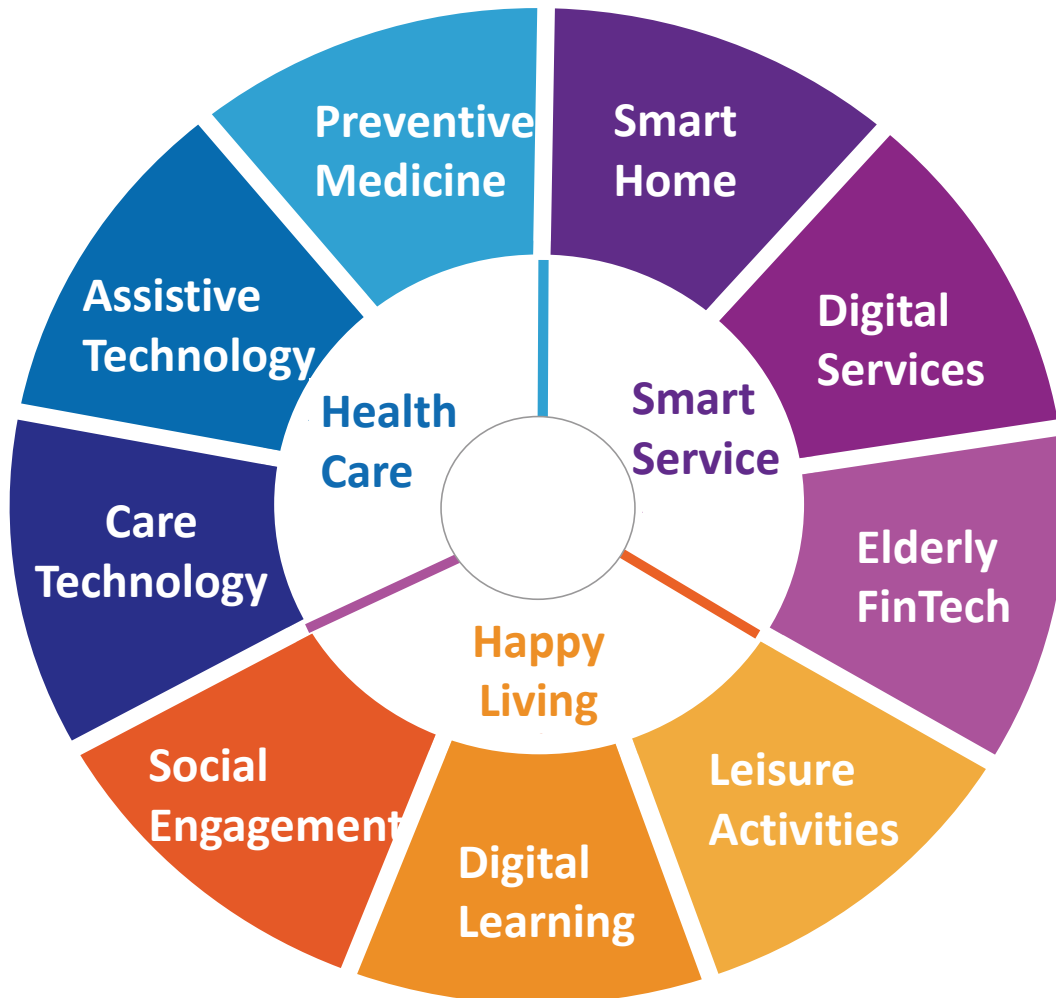
國科會、經濟部、數發部、衛福部、教育部  
勞動部、退輔會、農業部等跨部會共同啟動開幕





**Exhibition Dates:** Aug. 2 (Fri) - Aug. 4 (Sun), 2024  
**Venue:** Taipei World Trade Center Exhibition Hall 1  
**Exhibition Scale:** 800 booths Exhibition

**Themes:** 3 major themes, 9 major fields



### Smart Service:

Integrating elderly & friendly designs, digital services, and smart technology, to create a demonstration site for a tech-enhanced elderly lifestyle. Accelerating the widespread adoption of gerontechnology products and services, ensuring peace of mind, health, and convenience in elderly living!

### Healthcare:

From health management to assistive and caregiving technologies, linking cloud-based big data and mobile communication tools to promote healthy aging without the need for long-term care! Utilizing technology to enhance caregiving efficiency and outcomes, reducing the burden of care!

### Happy Living:

Gathering digital resources, technological learning, and social interaction tools tailored for the elderly, enhancing their skills in using digital technology and strengthen their social connections.

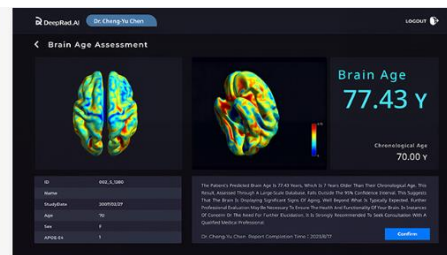
# ■ exhibitor highlights and 24 major categories are on the official website:

- Diet and clothing for the elderly
- Health Management and Promotion
- Cognitive and Brain Technology
- Assistive mobility technology
- Assistive Vision and Hearing Technology
- Assisted living technology

- Digital health management
- Cloud health monitoring
- Telehealth services
- Digital Education and Games
- Sports and leisure technology
- Age-friendly travel



DeepXray™、DeepSono™、  
DeepPACS  
臺北醫學大學



DeepBrain-Cognito：多模人工智  
慧個人化4D高齡健康失智預測...  
臺北醫學大學



AI零接觸樂活偵測系統

輔仁大學學校財團法人輔仁大學附設...



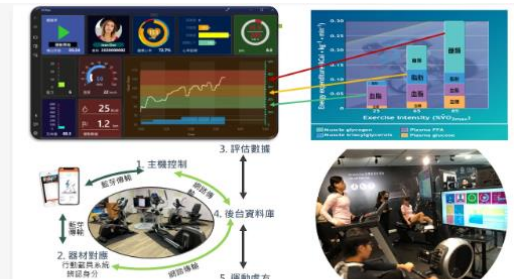
AI零接觸睡眠管理服務

輔仁大學學校財團法人輔仁大學附設...



體感遊戲Shape X 銀髮賦能-好腳手

財團法人紡織產業綜合研究所



精準醫療運動中心

長庚醫療財團法人



iSAFE照護感知系統

財團法人資訊工業策進會



福氣陪伴機器人

財團法人資訊工業策進會



# ■ exhibitor highlights and 24 major categories are on the official website:

- Learning resources and platforms
- Digital Education and Software
- Arts and cultural experiences
- **Social interaction platform**
- New communication technology
- **Senior talents and employment**

- Smart healthy home
- Home security technology
- Digital shopping service
- Smart mobile transportation
- **Financial Services and Security**
- **Health and Insurance Planning**



數位健康運動智能系統 跨域整合  
全人健康/認知與體適能促進運...  
長庚醫療財團法人



智慧高齡社區身心靈全人照護  
中國醫藥大學附設醫院



大同醫護股份有限公司-tHIS診所  
雲端系統  
高齡科技 智慧照護中華軟協主題館



中保無限+ 家庭守護服務  
中興保全科技股份有限公司



銀髮智慧賦能穿戴  
工業技術研究院



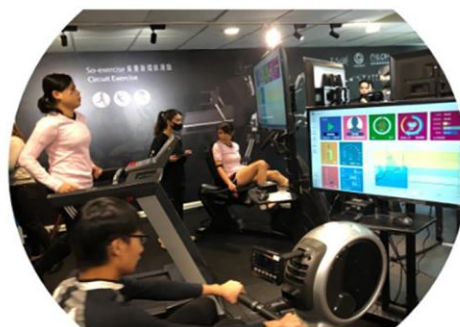
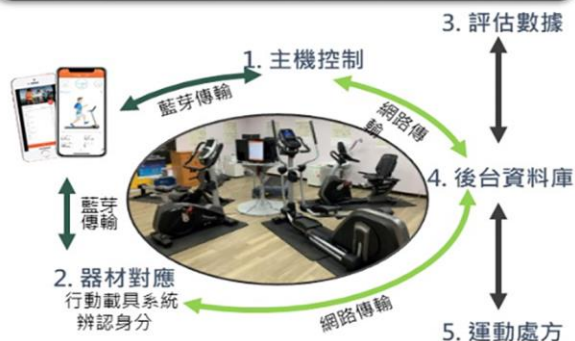
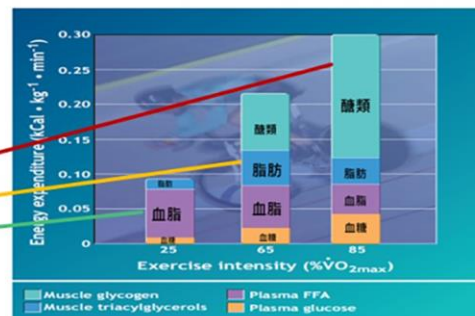
音樂療癒-智慧響叮噹  
工業技術研究院



樂活久久安養信託  
玉山商業銀行股份有限公司



不動產保全型信託  
玉山商業銀行股份有限公司



# 精準醫療運動中心

長庚醫療財團法人 | 展位: C309

售價: NTD 現場詢價

★ 肌少症的精準運動處方

08/03 11:30 - 12:00

查看更多 ▾

專業人士觀展報名

日期	時間	活動內容	地點
08.02	10:00 - 17:00	我的身體我要知！身體組成分析儀體驗	展位上
08.02	13:00 - 13:30	樂齡運動原則與「菜單」	展位上
08.02	13:30 - 14:00	別只用走的，小心衰弱追上你！-藉由伸平氧肌四大運動強化肌力	展位上
08.02	14:00 - 14:30	預防肥胖型肌少症 <b>Obesity-type sarcopenia</b>	展位上
08.02	14:30 - 15:00	高齡健康從齒開始 <b>Dental care</b>	展位上
08.02	15:00 - 15:30	銀髮風華-高齡皮膚保養的秘訣 <b>Skin Care</b>	展位上





## 數位健康運動智能系統 跨域整合全人健康/ 認知與體適能促進運動平台：健腦操運動中心

長庚醫療財團法人 | 展位: C309

售價: NTD 現場詢價

★ 數位健康運動智能系統-跨域整合全人健康  
08/04 10:30 - 11:00

[查看更多](#) ▼

08.03	10:00 - 17:00	我的身體我要知！身體組成分析儀體驗	展位上
08.03	10:30 - 11:00	黃斑部疾病種類及治療方法 <b>macular degeneration</b>	展位上
08.03	11:00 - 11:30	退化性關節炎治療新選擇-自體脂肪幹細胞治療 <b>degenerative arthritis</b>	展位上
08.03	11:30 - 12:00	肌少症的精準運動處方 <b>Precise exercise prescription for sarcopenia</b>	展位上
08.03	13:00 - 13:30	許您一個在地幸福老化	展位上
08.03	13:30 - 14:00	活得好、老得慢、病得輕-高齡友善全身健康檢查	展位上
08.03	14:30 - 15:00	AI智能診斷，精準守護腦健康 - 磁共振造影於神經退化疾病診斷預後之預測與應用	展位上
08.03	15:00 - 15:30	清醒開刀，拔除長輩的刺痛，談內視鏡門診手術應用於骨刺治療	展位上

**Expand the industrial ecosystem and build a cross-industry cooperation platform for the elderly**

- (1) Strengthen the industrial chains: food, clothing, housing, transportation, education, entertainment and sports.
- (2) Organize cross-industry cooperation such as medical care, finance, tourism, sports, and regional enterprises.
- (3) Explore new business models and promote cross-industry business opportunity cooperation.

### 2024 HATS Themes

1. health care area
2. Smart service area
3. Happy living area
4. Livable City Pavilion



### 2025 HATS Themes

1. Health care area
2. Food, clothing, housing, transportation and entertainment area
3. Sports vitality zone
4. Financial security sector
5. Livable urban pavilion for senior citizens
6. Age-friendly initiative recruitment fair





# 高齡健康產業博覽會

Healthy Ageing Tech Show

Dates: **Aug. 8 (Fri) - Aug. 10 (Sun), 2025**

Venue: **Taipei World Trade Center Exhibition Hall 1**

## 展區配置

### 主題展區

(一)健康照護區

(三)運動活力區

(二)食衣住行育樂區

(四)財務安心區

1.高齡營養「食」

(五)高齡宜居城市區

2.風範生活「衣」

(六)高齡就業博覽會區

3.友善居家「住」

4.便利自由「行」

5.樂齡學習「育」

6.休閒旅遊「樂」

•高齡健康嚴選餐桌與休憩區



30 November -3 December 2023, Taipei

## Health Tech

Longevity, and gerontechnology developed for healthy ageing society.

- Smart wearables
- Rehabilitation devices
- Exoskeletons / assistive robotics
- Chronic disease prevention & management
- Filter / purifier / disinfection technologies
- Nutrition & supplements



## Exhibitors

- Acer Medical
- ASUSTek
- ATTRA GIAND INDUSTRIAL
- AUYCI INDUSTRIAL
- B. Green Technology
- Bang Xin Enterprise
- BEMAR COMPANY LIMITED
- BROADSIMS
- CARVING ENERGY CONTROL

[Full list of exhibitors](#)



# Healthcare<sup>®</sup>

## EXPO · TAIWAN 2024.12.05-12.08



2024 活動網址

### ◆ Tech x Medicine: Expo Highlights in Medtech, Biotech and Healthtech

The Expo stands out among exhibitions of its type, fostering accelerated collaborations between the Medtech, Biotech, and Healthtech sectors. It provides a platform for showcasing cutting-edge technologies and solutions, sparking innovation, and fostering partnerships in healthcare.

#### Medtech



The Expo features upstream-to-downstream supply chains, showcasing innovative technologies, products, and services for therapeutics and patient care.

- Smart Hospital Solutions
- Medical Devices & Equipment
- Digital Health Technologies

#### Biotech



The Expo showcases supply chains from upstream to downstream, emphasizing diagnostics, labs, and services for screening, prevention, and treatment.

- Diagnostics, Laboratory
- Equipment & Services
- Biopharmaceutical Products & Services
- Regenerative Medicine Products & Services

#### Healthtech



The Expo presents consumer health products for people in various health states, aiding in immune health, managing risks, and promoting a healthy lifestyle.

- Preventive Medicine
- Consumer Health
- Long-term Care & Assistive Technology

# Branding Taiwan



*Thank you for your attention*