



臺灣精準健康產業的現況與展望



錢宗良

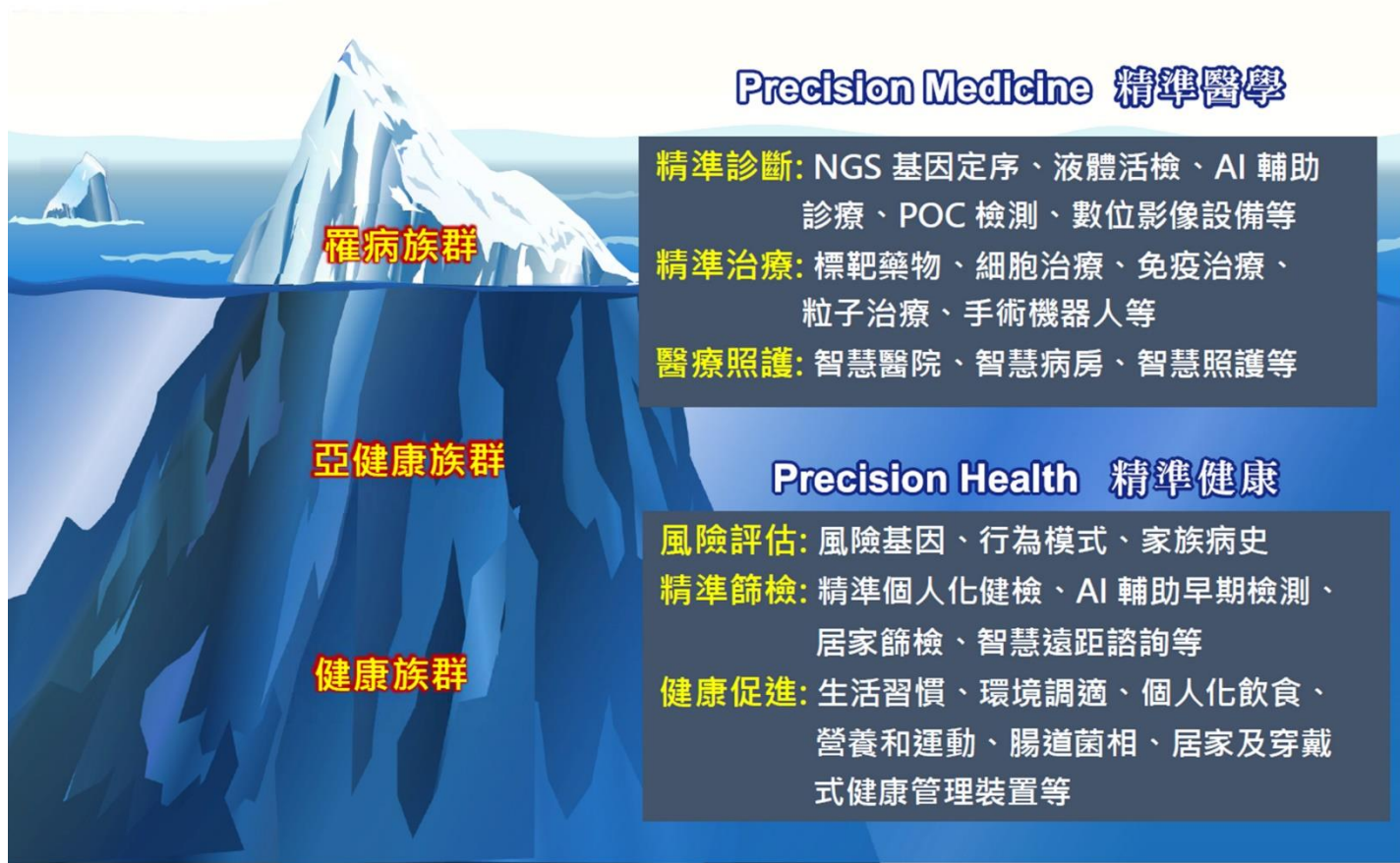
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Professor, College of Medicine, National Taiwan University
CEO, Institute for Biotechnology and Medicine Industry

上課大綱

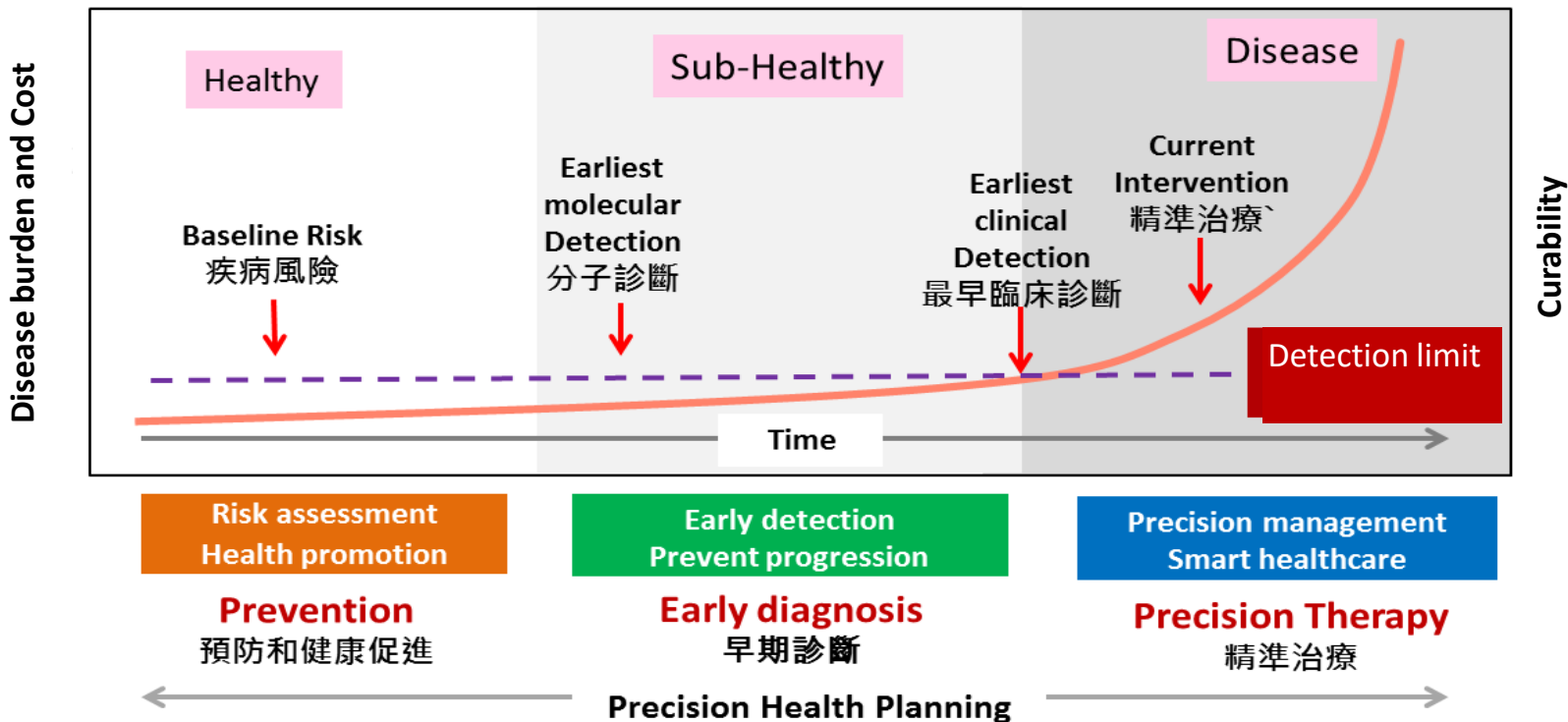
1. 精準健康與精準醫學
2. 臺灣精準健康產業：資通訊＋生醫產業
3. 國際行銷臺灣健康產業：生策會的任務

精準醫學與精準健康： 誰是未來大健康產業的藍海？



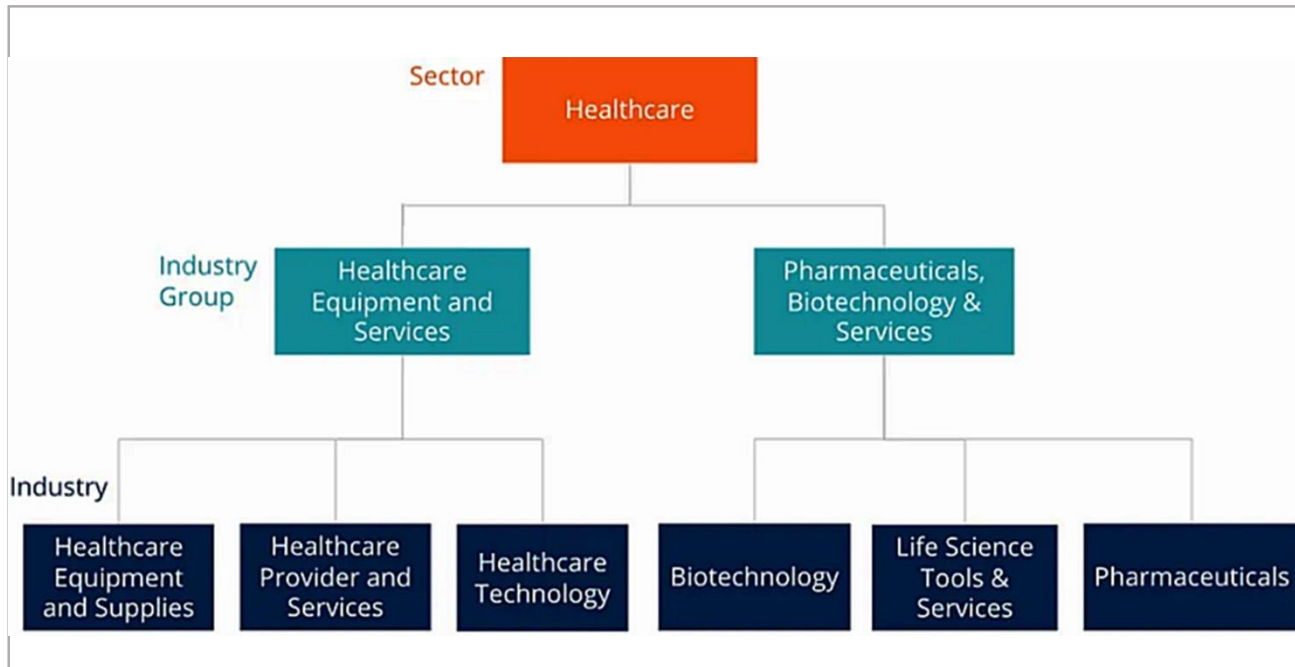
Healthcare from disease treatment to prevention

- 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:

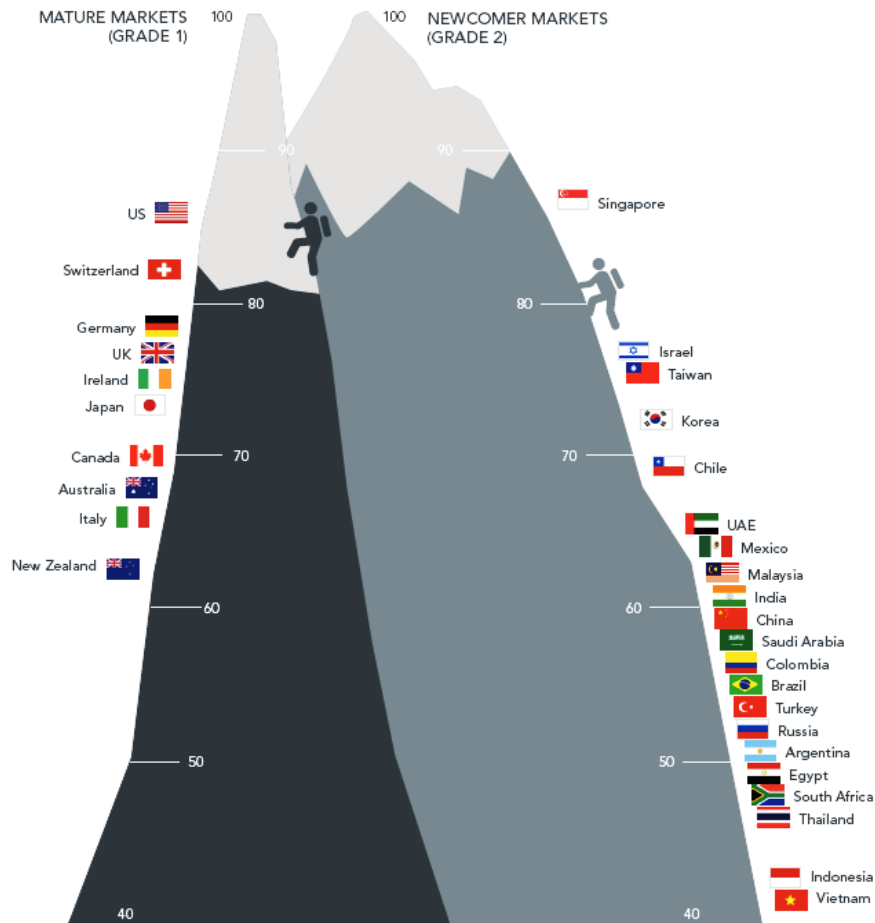
- International Healthcare
- Bio-pharmaceutical
- Medical device
- Regenerative medicine
- Smart health
- Precision medicine
- Sports medicine

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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)

Key drivers of Taiwan's healthcare industry

Advanced Medical Care



High Quality R&D and MFG



Strong ICT and Elec. Tech.



Advantages of Taiwan Medicine



Outstanding Healthcare Insurance System

- ❖ 99.6 % of Taiwan's 23.57 million people covered under the government-run National Health Insurance (NHI)
- ❖ Good accessibility-The NHI has a very high approval rate among Taiwanese people



High Quality Healthcare Services

- ❖ Out of 200 of the largest hospitals in the world, 14 are in Taiwan.
- ❖ Taiwan ranks third, just after the USA and Germany, in terms of medical service quality.
- ❖ shorter wait times for beds in large hospitals and medical centers



World-class Health Database

- ❖ National Health Insurance Research Database has been collected for more than 28 years (Since 1995).
- ❖ Medical centers with complete medical record and imaging data

Advantages of Taiwan ICT industry



Most concentrated industry clusters

- ❖ World's densest and most technologically advanced semiconductor production base.
- ❖ The Major Procurement Center for Global ICT Companies & Buyers



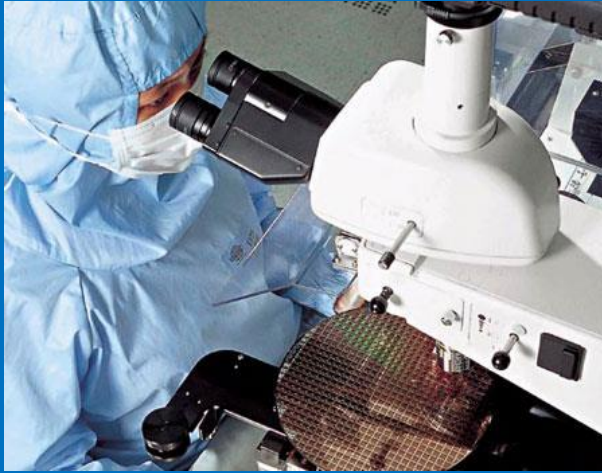
Strong ICT manufacturing capabilities

- ❖ Rich manufacturing experience and outstanding technologies
- ❖ The heart of the world's tech supply chain, offering high-quality products from IC design, semiconductor, to electronics.



Rapid Commercialization

- ❖ Ranked 1st in Worldwide Major ICT product market share for more than 10 products
- ❖ High levels of hardware/software integration capability for flexible production and rapid commercialization



ICT



Hospital



Smart Hospital



Healthcare IoT
Platform



Health AI



Medical &
Wearable Devices



Hospital
Equipment

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

Taiwan's ICT Sector in Healthcare

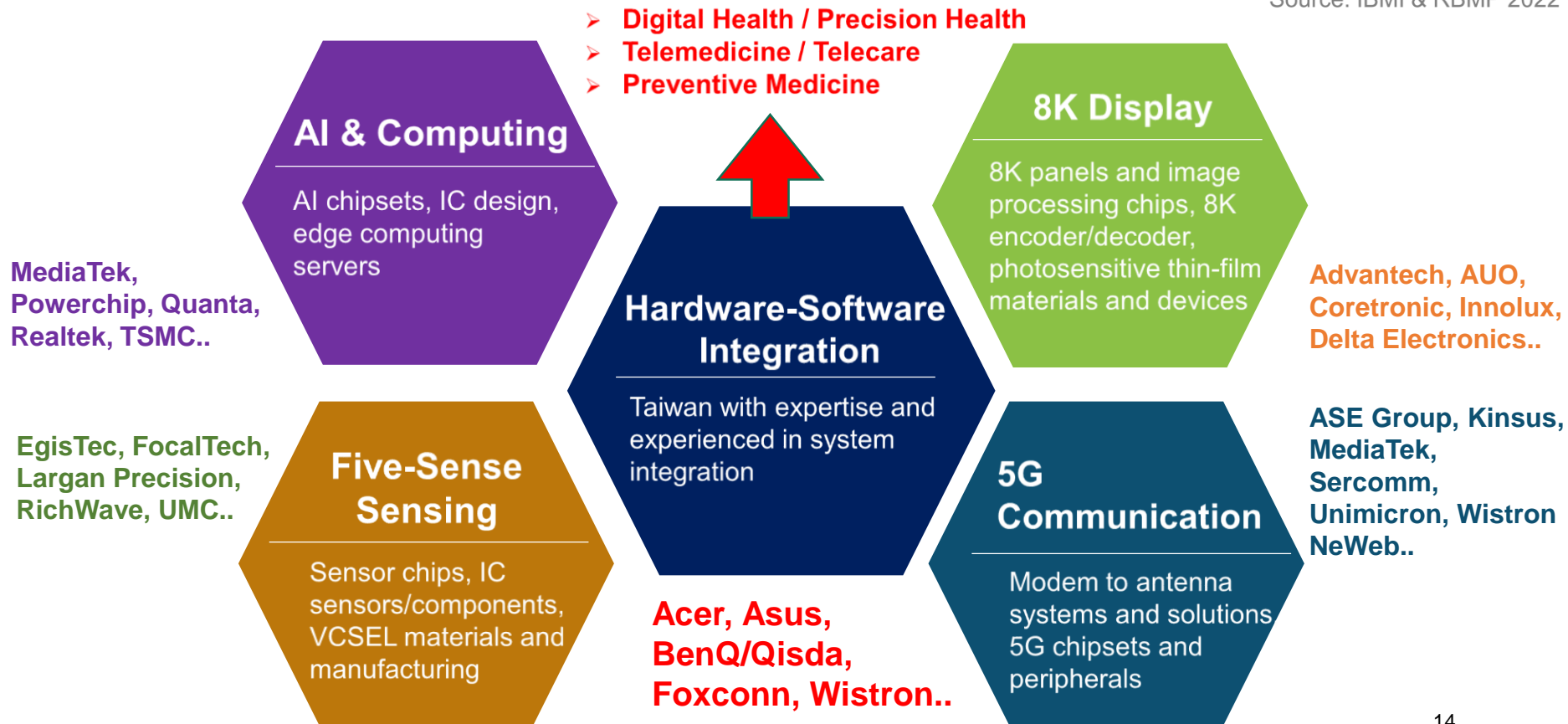
Precision Healthcare Industry

	Mobile health	Medical equipment	Smart hospital	Gene/cell therapy	Biomedicine	
Companies						
Product pipelines	<ul style="list-style-type: none"> ■ Tele-healthcare ■ IoT solutions ■ Wearables ■ Health management 	<ul style="list-style-type: none"> ■ X ray/ultrasound ■ Micro CT ■ Surgical robots ■ Capsule endoscopy ■ Hemodialyzer ■ Pathology/AI Image ■ Vital sign monitor 	<ul style="list-style-type: none"> ■ Smart ward/operating room ■ Surgical VR ■ AI solution ■ HMS ■ EMR / EHR ■ Medical display 	<ul style="list-style-type: none"> ■ DNA sequencer ■ DNA microarray ■ Protein & genetic testing ■ CTC system ■ Cellular therapy 	<ul style="list-style-type: none"> ■ AI chip ■ Biochip for gene sequencing ■ RF & Wireless chip ■ Biosensor ■ Display component ■ Organic semiconductor 	
Areas of application						

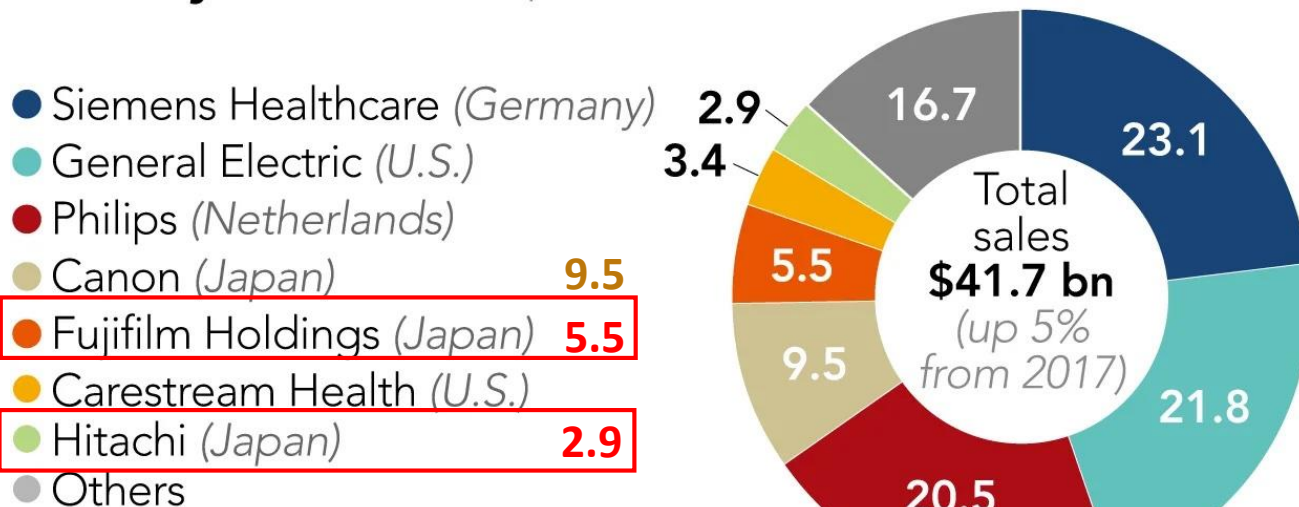
Taiwan Industry Overview

Market Players and Focus Areas

Source: IBMI & RBMP 2022



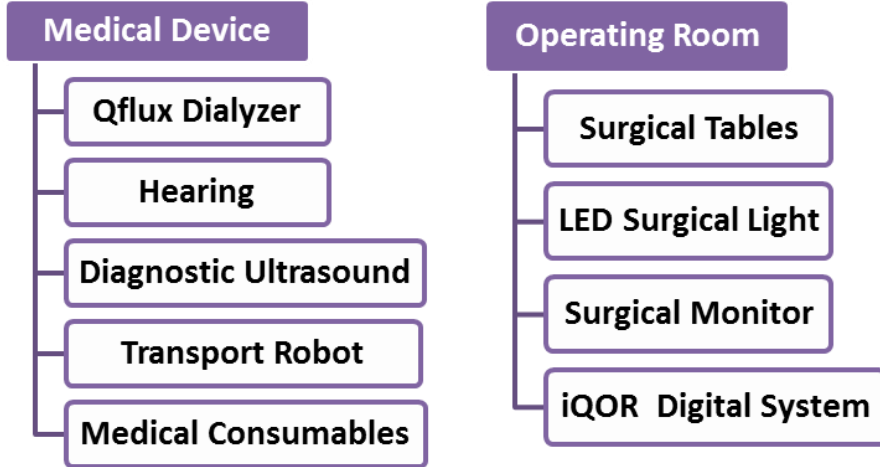
Diagnostic imaging equipment global market share by sales (2018, in percent)



Source: Evaluate **8.4+ 9.5 =17.9 (Japan)**

2月18日，富士表示：「兩家企業合併後，會將各自影像處理和人工智慧軟體和日立超音波、MRI 結合，**打包販售給醫療機構**。」 **To provide the total solution!**

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

Taiwan leading hospitals are expanding their productivity from building smart hospital...



彰化基督教醫院
CHANGHUA CHRISTIAN HOSPITAL



員林基督教醫院
Yuanlin Christian Hospital



U.S. Green Building Council
LEED Gold Level Certification on
Dec, 2015



ICT Players launch products and solutions:

- ◆ Smart Nurse Station
- ◆ Smart Ward
- ◆ Smart Clinic
- ◆ Smart Counter
- ◆ Smart Dialysis
- ◆ Smart Operation Room
- ◆ Multimedia interaction
- ◆ Accompany robot
- ◆ Logistics Management



Smart Ward: Beside Infotainment System

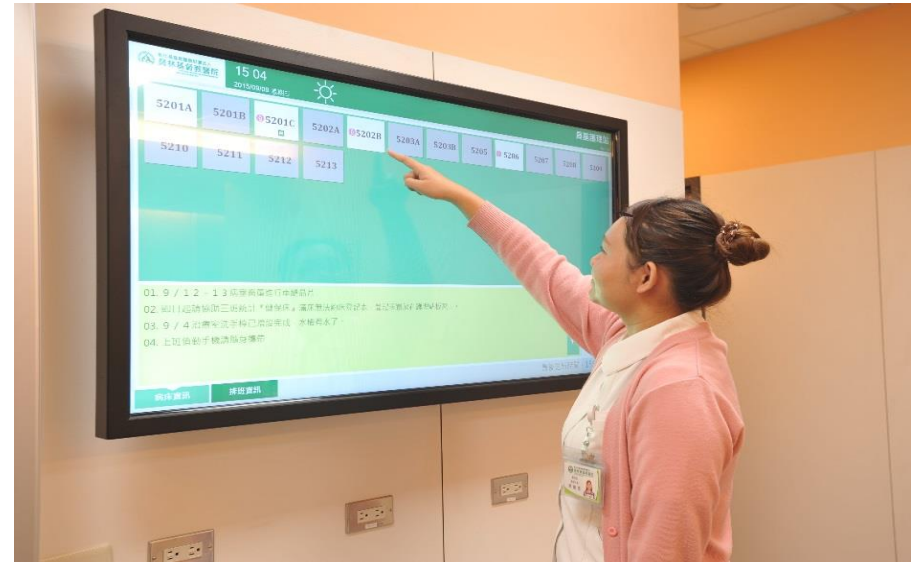
- ◆ Interactive environment
- ◆ Disclosure real-time information
- ◆ Treatment schedule



Smart Nurse Station: Nursing Dashboard

Improvement Nurse Care Quality and Work Flow

1. No paper works
2. Real time nursing shifting
3. Real time patient information (location, activity, schedule)
4. Pre-alarm system



Telecare: Diabetes Integrated Health Care Center



Web Interface - Patient Information Table

姓名	性別	年齡	電話	地址	醫師	護士	藥師	營養師
張三	男	65	0912-345678	台北市中山區	陳醫師	李護士	王藥師	張營養師
李四	女	58	0912-876543	台北市中正區	陳醫師	李護士	王藥師	張營養師

Web Interface - Diet Recommendation Table

品名	單位	熱量	蛋白質	脂肪	碳水化合物
蛋餅	1份	250	10	15	30
豆漿	1小杯	100	5	2	15

PHA 推薦飲食組合如下：

蛋餅 - 1份
豆漿 - 1小杯

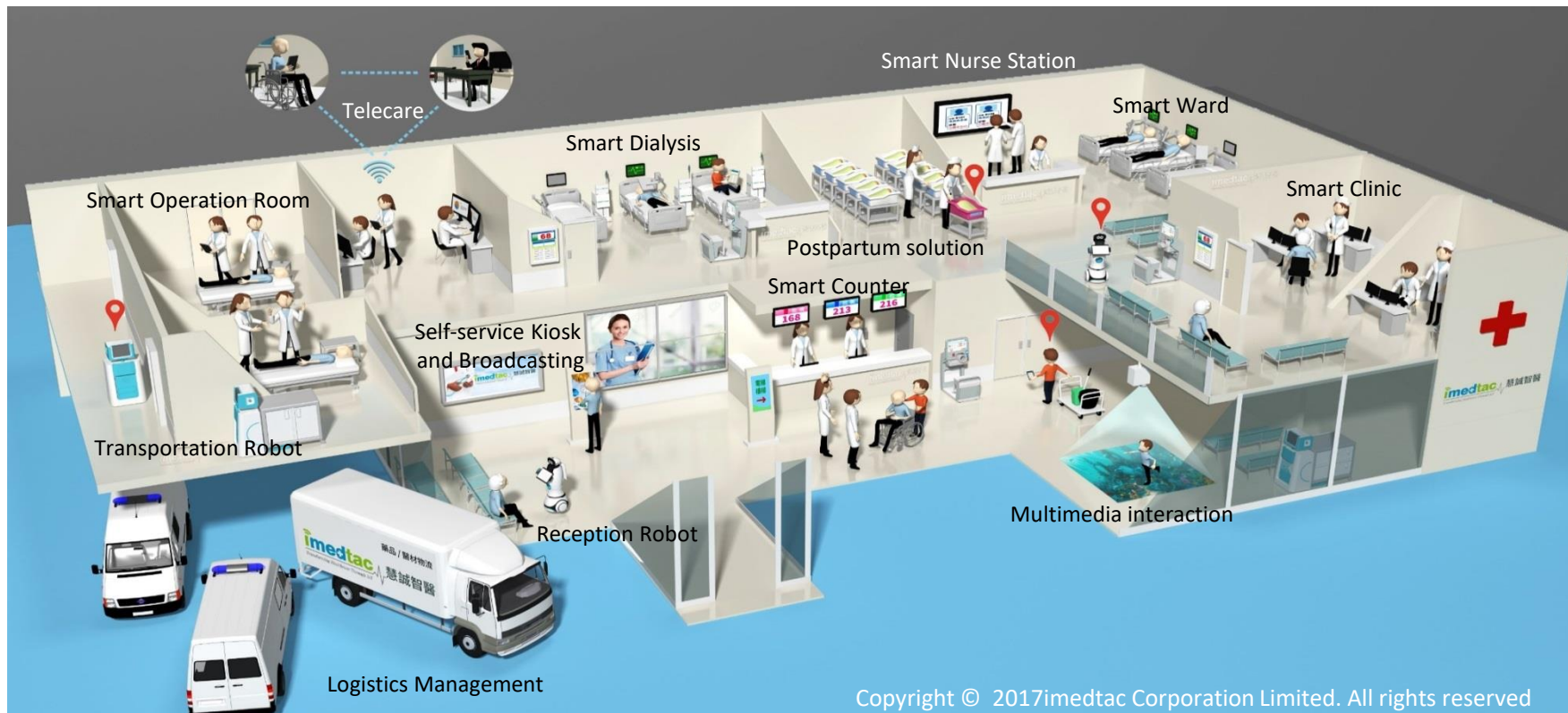
成份：

完成 其它組合



Integrated Solutions in Smart Hospital

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



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社團法人國家生技醫療產業策進會 (IBMI)

Established Year: 2002

·Board of Members: Government Officials/ Leaders from Academia and Medical Centers/ Industrialist



Founded by the former president of the Legislative Yuan of Taiwan, Mr Jin-Pyng Wang, IBMI is an independent, not-for-profit organization voicing Taiwan-based health care 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 health care providers and an incubator to health care startups in areas of novel technologies, 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

Our Board

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 health care.

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
Taipei Medical University-Shuang Ho Hospital
Ten-Chen Medical Group
Tri-Service General Hospital
Wei Gong Memorial Hospital

Research & development

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.

400
Core Members

FOXCONN

ADVANTECH

BENQ

REALTEK
瑞昱半導體股份有限公司

CATCHER
smart process

WISTRON

PEGATRON
和碩聯合科技

TSC
群創科技

PSC
力晶半導體
Powerchip Semiconductor Corp.

iKala

Integrate resources and promote the biomedical and healthcare industry

Policy Think Tank

- Act for the Development of Biotech and New Pharmaceuticals Industry.
- Cross-Strait Cooperation Agreement on Medicine and Public Health Affairs.
- Amendment of the Fundamental Science and Technology Act.
- The Human Biological Database Management Act
- Pharmaceutical Affairs Law and Medical Care Act
- 33 biomedical policies

Partnership & Collaboration

- Healthcare + Expo Taiwan
- Taiwan Healthcare + Portal
- MEDTEX Summit Asia
- International Hospital Leadership conference
- Bio Taiwan Highlights



Awards & Certification

- Symbol of National Quality (SNQ) accreditation & certification
- National Innovation Awards

Startup Incubation

- Allied with 36 Universities & Research Institutes
- Startup Angel investment



衛生福利部 113年度 新南向醫衛資源整合平臺計畫後續擴充



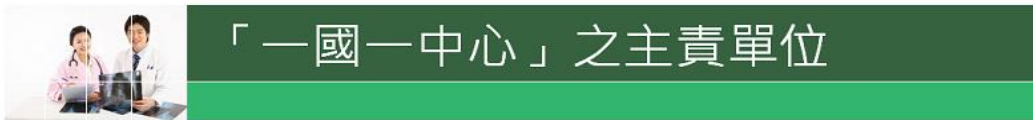
計畫主持人: 錢宗良執行長

協同主持人: 沈金輝處長

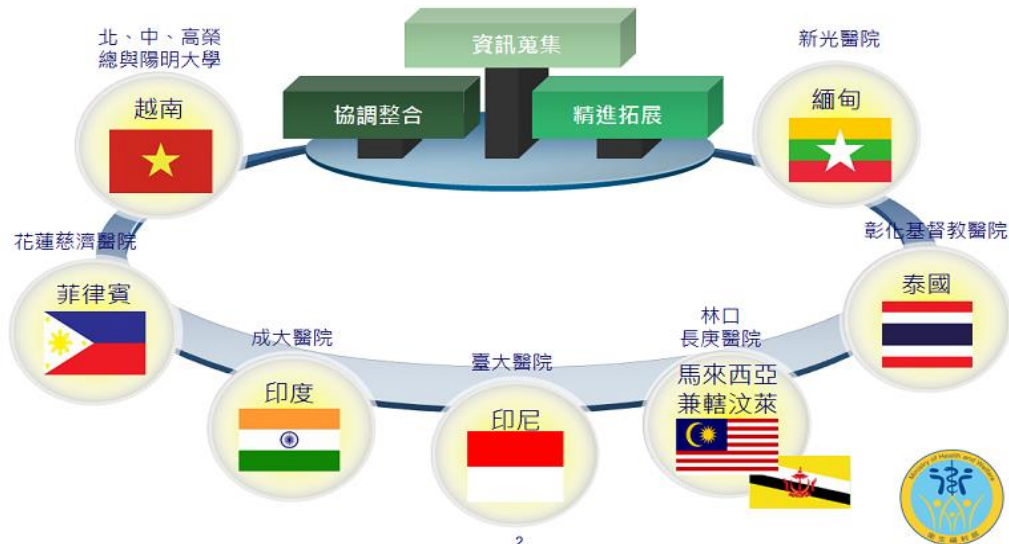
2024.03.25

- ❑ Taiwan has become the most important exporting Smart Hospital Solution country in Asia.
- ❑ Offer Total solutions to assist Asia countries to build smart hospitals or improve hospital management effectiveness.

- Thailand (彰基)
- Malaysia (長庚+中國附醫)
- India (成大)
- Vietnam (榮總+高醫)
- Indonesia (台大+亞東)
- Philippine (慈濟)
- Myanmar (新光)



透過委託具醫學中心量能之機構，在當地執行一國一中心計畫。



113 「新南向醫衛合作與產業發展計畫」(10 國 13 中心)

國家	區域	得標醫院
越南 (A 區)	峴港 (含) 以北	臺北榮民總醫院
越南 (B 區)	峴港以南	財團法人私立高雄醫學大學附設中和紀念醫院
印尼 (A 區)	雅加達、萬隆、泗水及三寶瓏	國立臺灣大學醫學院附設醫院
印尼 (B 區)	雅加達、棉蘭及巨港	醫療財團法人徐元智先生醫藥基金會亞東紀念醫院
馬來西亞 (A 區)	吉隆坡及馬來亞半島 (西馬)	長庚醫療財團法人
馬來西亞 (B 區)	吉隆坡、沙巴、砂拉越 (東馬) 及汶萊	中國醫藥大學附設醫院
泰國 (A 區)	泰國 (除泰北以外)	彰化基督教醫療財團法人彰化基督教醫院
泰國 (B 區)	泰北及寮國	衛生福利部雙和醫院 (委託臺北醫學大學興建經營)
菲律賓 (A 區)	馬尼拉及其以北	
菲律賓 (B 區)	馬尼拉及其以南	臺北市立萬芳醫院-委託臺北醫學大學辦理
印度		國立成功大學醫學院附設醫院
緬甸		新光醫療財團法人新光吳火獅紀念醫院
柬埔寨		衛生福利部桃園醫院



《主責新南向政策醫衛產業供應鏈工作小組》 醫衛產業合作搭橋



台灣利基醫衛產業鏈

數位醫療



企業

產品

- ✓ 遠距照護系統
- ✓ IoT設備/維修
- ✓ 穿戴式裝置
- ✓ 健康數據監測分析與管理系統

醫材設備



- ✓ 血液透析器
- ✓ 微型電腦斷層
- ✓ X光/超音波
- ✓ 生理監測設備
- ✓ 膠囊內視鏡

細胞治療

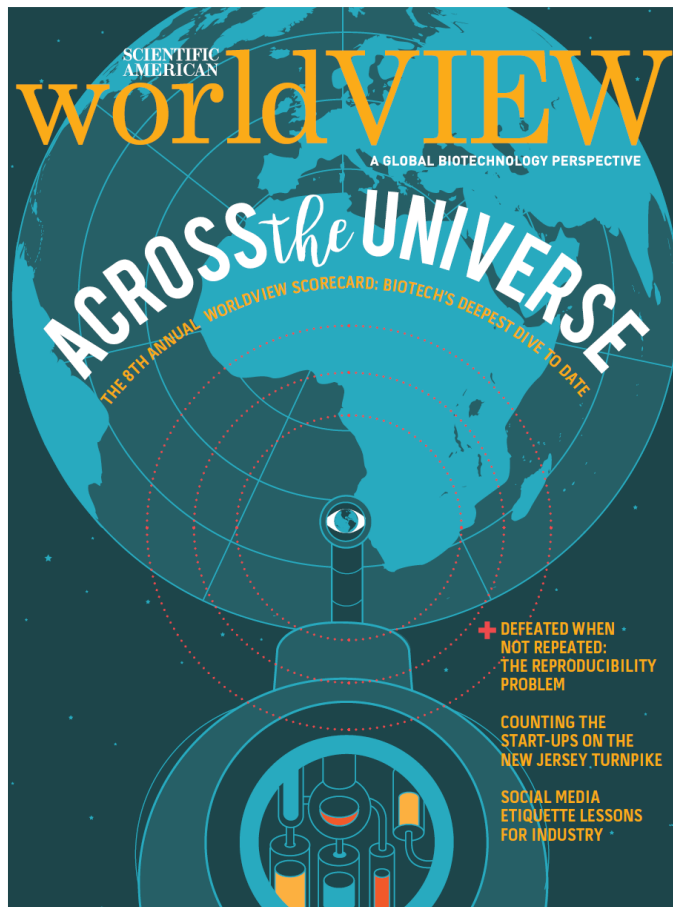


- ✓ CTC檢測系統
- ✓ 細胞療法
- ✓ 基因定序及晶片
- ✓ 蛋白質與基因檢測

精準檢測



- ✓ AI晶片
- ✓ 有機半導體元件
- ✓ 影像顯示元件
- ✓ 體徵訊號量測感應器



2016 & 2020 Scientific American

WORLDVIEW SCORECARD

-  PRODUCTIVITY
-  IP PROTECTION
-  INTENSITY
-  ENTERPRISE SUPPORT
-  EDUCATION/WORKFORCE
-  FOUNDATIONS
-  POLICY & STABILITY



Enhanced with a new guidebook and region-specific ratings, the 2016 Scorecard ventures deeper than ever to track down the latest in biotech innovation

Taiwan,

Country Rank
23 / 54

2020

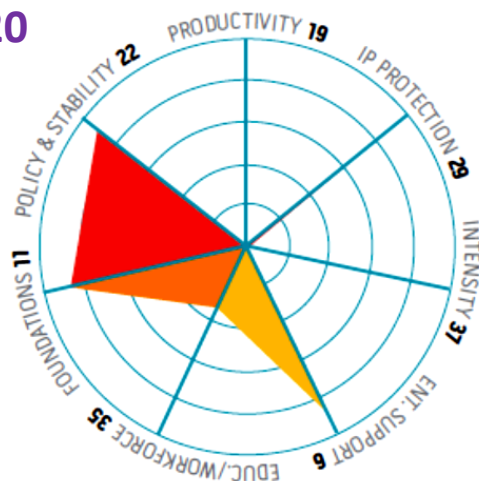
SAWV SC rank: 23

Population: 23,359,928

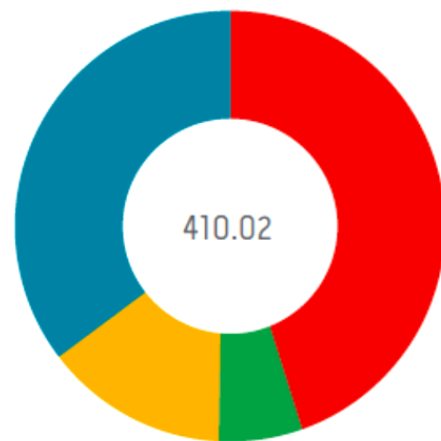
GDP: 489

R&D/GDP: 0

With an overall average of 22.4 on the SC, Taiwan's ranking of 23rd in 2016 is just about on par, and it performs even better on the *Nature Index 2015 Global*, with an 18th place overall ranking and its National Taiwan University landing in the top 100. Moreover, Taiwan advertises its biotechnology capabilities through international events, including BioTaiwan 2016. This will be the 14th annual event, and it will include presentations from companies around the world, as well as one-on-one partnering, seminars and workshops. A large exhibition is also expected, including more than 1,200 booths from 600 companies. On



August 20, 2015, *Taiwan Today* reported, "A wide-ranging development plan targeting Taiwan's biotechnology-based economy is set to kick off next year, according to Premier Mao Chi-kuo." The report continued: "Focusing on agriculture, biomedicine, food, health care and medical instruments, the 10 year initiative will potentially expand the scale of the local bioeconomy to



NT\$4 trillion (US\$123.2 billion) in 2026." With respectable scores on the SC's Foundations and Enterprise Support categories, Taiwan's commitment to innovation is clear. Like many other countries, however, **Taiwan's Education/Workforce category** shows room for improvement.

Source data from *Scientific American Worldview* (<http://www.saworldview.com>)

2016 Scientific American Worldview -A Global Biotechnology Perspective

Asian Countries' Performance

Country	Global Ranking	Productivity	IP Protection	Intensity	Enterprise Support	Education/ Workforce	Foundations	Policy & Stability
Singapore	2	---	8.3	3.8	9.2	4.5	6.6	9.6
Hong Kong	11	0.0	7.1	1.6	8.6	1.6	6.7	9.0
Japan	15	0.1	9.2	0.6	4.5	3.6	7.9	8.0
Taiwan (Score/Rank)	23	0.0/19	5.8/29	0.1/37	7.0/6	2.6/35	6.9/11	7.2/22
South Korea	24	---	5.6	0.6	4.8	3.9	8.3	6.3
Malaysia	27	---	5.5	1.1	8.0	2.1	4.9	5.9
China	41	0.1	4.7	0.6	4.5	1.3	4.0	2.9
Thailand	45	---	2.3	3.0	3.4	2.7	3.0	1.8
India	49	0.0	4.3	0.8	3.5	0.2	1.6	2.0

Source: 2016 Scientific American Worldview

CATEGORY QUICK GUIDE

#1 PRODUCTIVITY *Publicly traded biotechnology companies and output*

- 1.1 Public company revenues (US\$m)
- 1.2 Public companies

#2 IP PROTECTION *Quantitative and qualitative intellectual property protection*

- 2.1 Patent strength
- 2.2 Perceived IP protection

#3 INTENSITY *Effort in biotechnology innovation*

- 3.1 Public companies / million population
- 3.2 Public company employees / capita
- 3.3 Public company revenues / \$B GDP
- 3.4 Biotech patents / total patents filed with PCT
- 3.5 Value added of knowledge- and technology-intensive industries
- 3.6 Business expenditures on biotechnology R&D

#4 ENTERPRISE SUPPORT *Business environment and capital availability*

- 4.1 Business friendly environment (higher = better)
- 4.2 Biotech VC, 2007 (\$mm)
- 4.3 VC availability
- 4.4 Capital availability

#5 EDUCATION/WORKFORCE *People trained in biotechnology*

- 5.1 Post-secondary science graduates / capita
- 5.2 Ph.D. graduates in life sciences per million population
- 5.3 R&D personnel per thousand employment
- 5.4 Talent retention (reciprocal of brain drain)
- 5.5 Brain gain (share of global students studying outside their country)

#6 FOUNDATIONS *Infrastructure and R&D drivers*

- 6.1 Business expenditures on R&D (% of GDP)
- 6.2 Gross domestic expenditure on R&D (% of GDP)
- 6.3 Infrastructure quality (roads, ports, electricity, etc.)
- 6.4 Entrepreneurship and opportunity

#7 POLICY & STABILITY *Government control*

- 7.1 Political stability and absence of violence/terrorism
- 7.2 Government effectiveness
- 7.3 Regulatory quality
- 7.4 Rule of law



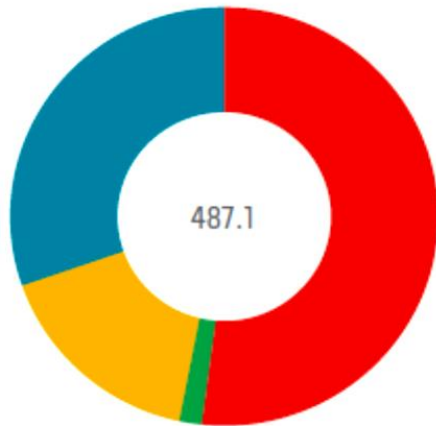
Singapore

SAWV SC rank: 2
 Population: 5,567,301
 GDP: 298
 R&D/GDP: 2

Singapore can boast a top 10 finish throughout the SC's history, and a top five finish in every year except 2011. It also scores well on other measurements: 15th for output in the *Nature Index 2015 Global*, with more than half of the publications in chemistry; and fifth on the 2015 BCI index, which stated: "Singapore has relatively strong

capabilities in R&D and manufacturing, with most of the necessary regulatory frameworks and safeguards in place and in line with international best practices." In part, ongoing investment in science and technology explains Singapore's high ranking. On January 12, 2016, for example, *ScienceInsider* reported, "The government of Singapore has announced that it plans to spend [US\$13.2 billion] on research and development between 2016 and 2020." In addition, the National University of Singapore opened a US\$25 million synthetic biology center on September 30, 2015. Other news reveals the allure of Singapore as an international leader in science. For instance, Rockefeller University plant molecular biologist Nam-Hai Chua announced plans to move his research—exploring plant RNA's impact on drought tolerance—to Singapore's Temasek Life Sciences Laboratory. Indeed, Singapore is a go-to country for biotechnology research, as well as for R&D in general.

Country Rank
 2 / 54
 2020



In part, ongoing investment in science and technology explains Singapore's high ranking.

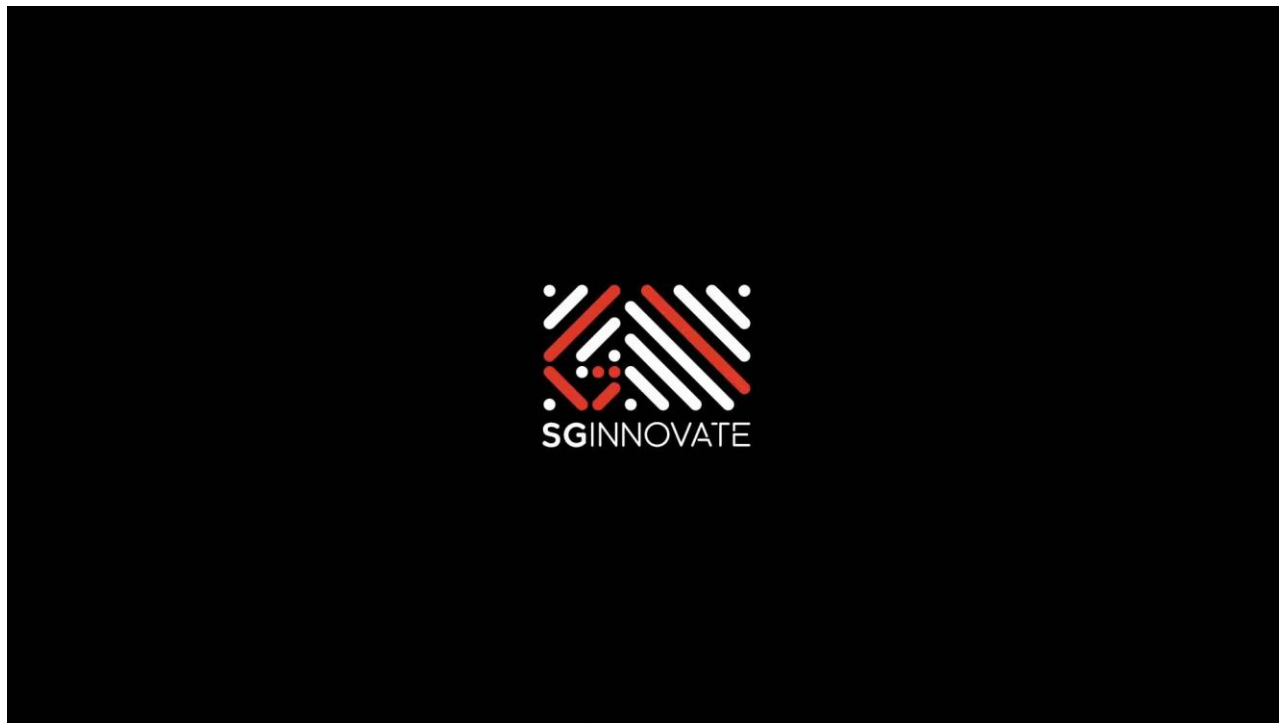
The top-ranked countries in *Government effectiveness* are [Singapore](#), [Switzerland](#), and [Finland](#).

新加坡：非常積極推動生技產業國際鏈結，已成功扮演亞太地區領頭羊的角色。針對國際華人健康市場之拓展，臺灣是可以嘗試與新加坡合作，創造雙贏的機會。

The top-ranked countries in **Regulatory quality** are [Singapore](#), [Australia](#), [Canada](#), [Finland](#), [Hong Kong](#), [New Zealand](#), and the [United Kingdom](#). Source data from *Scientific American Worldview* (<http://www.saworldview.com>)



2019年5月23日新加坡
Medtech Connect 論壇



SGInnovate interview: <https://youtu.be/3ktQSyfe7n0>

Thailand

Country Rank

45 / 54

SAVV SC rank: 45

Population: 67,741,401

2020

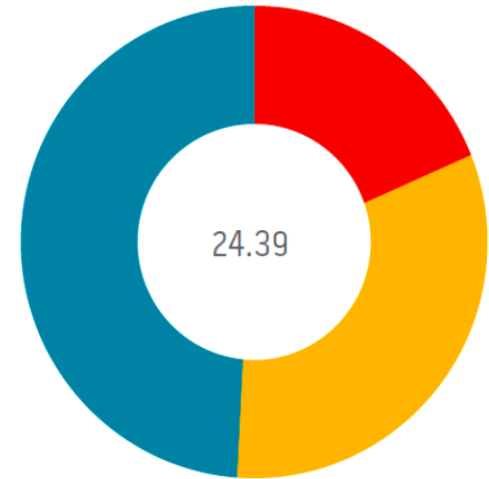
GDP: 387

R&D/GDP: 0.39

Between 2014 and 2016, Thailand bounced around the 40s in the SC rankings—from low to high and back to the mid-40s. Even so, this is a far better showing than its bottom-of-the-list performance in 2013. Similarly, Thailand ranked 42nd on the *Nature Index 2015 Global*. On the plus side, its National Biotechnology Policy Framework aims to push the country much higher as an international force in the industry. In particular, that framework seeks to improve biotechnology education and training. Among the SC categories, Thailand already performs the best in Education/Workforce, and the government's plans



could improve that capability even more. Experts are applauding Thailand's efforts so far, and express tempered optimism about its future prospects. A September 2015 USDA GAIN Report stated: "Thailand made some progress in 2015 on laying out a draft regulatory framework on adopting agricultural biotechnology. Thai biotech proponents are likely to gain more support from



policy makers in both government and parliament. However, it may take a few years to revoke a ban on biotech field trials in the country." Like many other countries that perform poorly on the SC, Thailand needs to drastically improve its IP Protection, as well as its reputation in the SC category of Policy & Stability. A strong biotechnology industry must do well in these areas.

泰國：是臺灣可與合作共同拓展國際生技產業的夥伴。特別在農業食品生技與國際醫療服務領域，或將有助營造互利共贏之機會。

The top-ranked countries in *Talent retention* are [Saudi Arabia](#), [Thailand](#), and [Chile](#).

Source data from *Scientific American Worldview* (<http://www.saworldview.com>)



2019年7月10日生策會到泰國曼谷，受泰國醫材公會邀請演講，介紹 Taiwan Healthcare Plus



2019年7月11日參加彰化基督教醫院籌劃在曼谷東協醫材展上舉辦的臺灣醫材產品說明會

Thailand & Taiwan Bilateral Cooperation



MDA2019



- Taipei Veterans General Hospital
- Service General Hospital
- 台北榮安醫院
- 國泰醫院
- 和合醫院
- 保德慈善醫療財團法人



- Chi Mei Hospital
- 高雄長安紀念醫院
- Kaohsiung Medical University Chung-Ho Memorial Hospital
- Kaohsiung Veterans General Hospital

Visit CCH 2018



Advantage:

- Manufacturing
- Investment opportunity
- Clinical Trials

Advantage:

- Top medicine tourism
- Full support by Thailand 4.0 initiative
- Core position in ASEAN

MeDIC F.T.I.



TPHA



TMI



111年度執行成果： Thailand Medical Industry Visit in 2022

(Chunghwa Telecom, Imedtac, Huede Technology, Insight Medical Solutions)



112年度執行成果：

-新南向國家產業媒合與市場拓銷活動

2023台泰智慧醫療研討會坊（泰國曼谷）

- ◆ 國內廠商：慧誠智醫、大江基因、龍骨王、世基生物、安克生醫、醫百科技、倍利科技、上銀科技、神經元、三鼎生物、英華達、柏瑞醫、福濟生物、雅博、安奕生物、和鑫生技、振馨科技、慧術科技、中華電信、華碩電腦
- ◆ 展示項目：智慧醫療產品，包括5G技術、人工智能解決方案、圖像分析平台、遠程醫療解決方案、智能病房



India

Country Rank

49 / 54

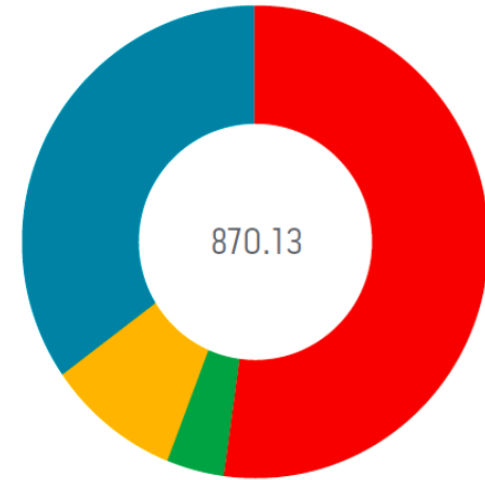
SAVV SC rank: 49

Population: 1,236,344,631 2020

GDP: 1,877

R&D/GDP: 0.82

Effort alone equated with success in biotechnology, India might top the SC and other indices. At the end of 2015, India released a new National Biotechnology Development Strategy, and some of its key goals included generating biotechnology products, increasing bio-manufacturing and producing biofuels. In fact, Shell India Markets plans to build a biofuel plant in Bangalore. Its 13th place ranking on the *Nature Index 2015 Global* suggests that some of India's efforts are paying off. Also, on January 8, 2016, an online article from *Nature Biotechnology* reported: "Most new companies emerging in the GM field are based in the United States and in Asia,



especially India, whereas public developers of the technology are appearing in India and China." Nonetheless, the 2015 BCI described India as facing a "struggling ability to compete," and noted: "India possesses the foundation and potential for becoming a hub of biopharmaceutical innovation—but currently faces several major structural barriers to moving up

from the bottom ranks in biomedical competitiveness. Local executives particularly noted the presence of major regulatory deficiencies and bottlenecks and very limited coverage of medicines, even with costs driven down. In addition, they highlighted major gaps in India's biopharmaceutical IP protection that render the system overall ineffective."

印度：在國際產業市場佈局上是不容忽視的人口大國，特別是與人密切相關的健康產業。與印度還算友善的臺灣可仿效日本模式，先投資在人才，再拓展未來廣大的市場。

India scored 0.03/10, in *Productivity* which places it 17th of the 54 countries studied. India was tied with [Finland](#) and [Ireland](#) and [Taiwan](#).

India scored 0.77/10, in *Intensity* which places it 26th of the 54 countries studied. India scored ahead of [China](#) and [Austria](#).

Source data from *Scientific American Worldview* (<http://www.saworldview.com>)



2019年5月14日 參加印度經貿訪問團在Bangalore 的招商活動。並參與竹科管理局在 Bangalore 主辦的 Taiwan-India Medical Cooperation Forum.

印度理工學院海得拉巴校區

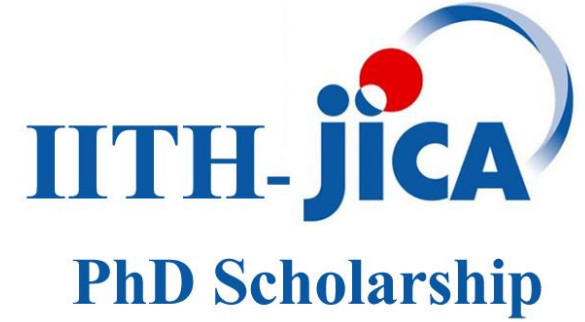
Indian Institute of Technology

Hyderabad is a public technical and research university located in Sangareddy district, Telangana, India.



भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Japan International Cooperation Agency



Apple's 1st Campus
Placement In India

Nov 6, 2017

Dr. Harsh Vardhan is an Indian [Otorhinolaryngologist](#) and the incumbent **Minister of Health and Family Welfare, Minister of Science and Technology** and **Minister of Earth Sciences**.

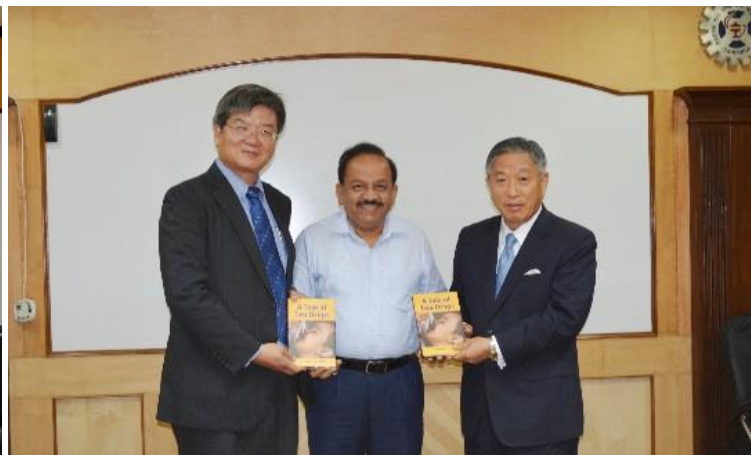
Dr. Harsh Vardhan was elected to the office of [Chairperson of Executive Board of the World Health Organization](#) from May 22, 2020.



A Tale of Two Drops



Dr. Harsh Vardhan



2015-07-20 科技部錢宗良次長及田中光大大使拜會印度科技部長 Hon. Harsh Vardhan。Hon. Vardhan部長並於會中致贈著作” A Tale of Two Drops”予錢次長及田大使。

Dr. Guljit Chaudhri Chief, Managing Director of Innonation, ABLE (Association of Biotechnology Led Enterprises)

Guljit started her career with international business, strategic alliances including joint ventures and domestic marketing of pharmaceuticals.

India: one of the observers of ICH*.

*The International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH)



2019-05-17 拜訪 Invest Inida, 邀請 Dr. Guljit Chaudhri 來台參加 EXPO



2019-12-05 Dr. Guljit Chaudhri 來台參加Taiwan Healthcare EXPO

印度在全球仿製藥市場佔據主導地位，2017年/18年度(4-3月)藥品出口規模達到173億美元，包括對美國和歐盟的出口。其中對中國的出口僅佔1%。

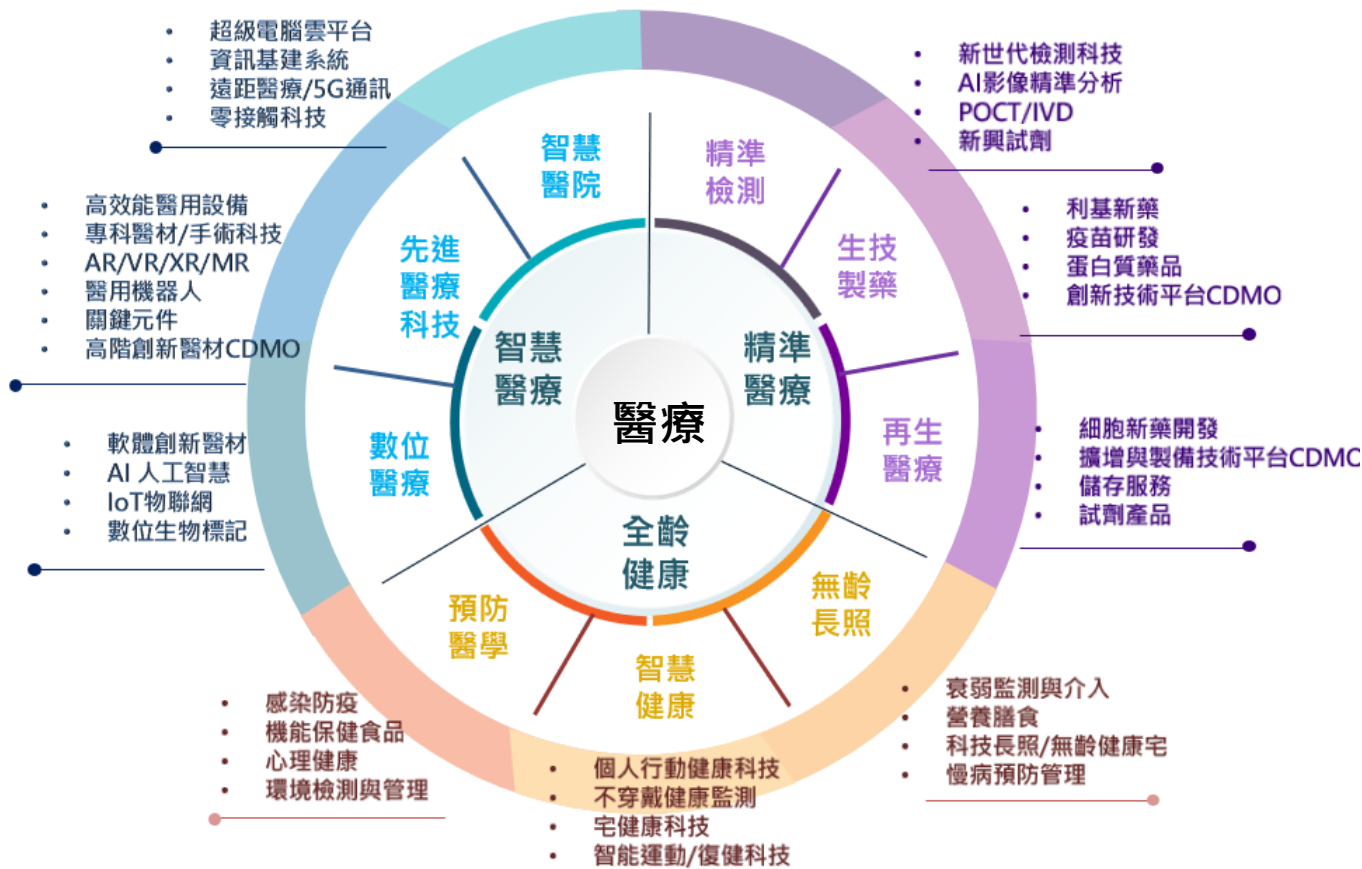


2018年7月18日，中國國務院總理李克強就電影《我不是藥神》引發輿論熱議作出批示，要求有關部門加快落實抗癌藥降價保供等相關醫療改革措施。

Healthcare[®] 2023.11.30-12.03
EXPO · TAIWAN 台灣醫療科技展

第七屆台灣醫療科技展

聚焦三大產業鏈：智慧醫療、精準醫療、全齡健康



開發國際新市場：深耕亞太，拓展中東、東歐潛力新市場

- (一) 中東：首次組團，涵蓋當地醫院、診所主要大型醫藥通路商
- (二) 東歐潛力新市場- 波蘭參與最為積極、捷克醫材協會亦已正式採購合作
- (三) 亞太區：日本主要由藥物授權協會與製造協會組團來台尋求合作商機
韓國以醫材醫美設備合作為主

亞太地區：馬來西亞人數規模最大、已逾150位；菲律賓人數規模次之、已逾百位
馬國私醫協會與東南亞最大私人醫院集團IHH帶領20多間醫院
菲律賓私立醫院協會與公立醫院協會、帶領大馬尼拉地區20多家醫院來台合作

展後報告：

<https://expo.taiwan-healthcare.org//data/tmp/20240103/20240103o16aww.pdf>



08.02 (Fri)



08.04 (Sun)

TWTC Hall 1



高齡健康產業博覽會

Healthy Ageing Tech Show

完整串聯高齡健康生態圈！

推進高齡健康生活、智慧生活、快樂生活！

主辦單位：生策會、生策中心、工商協進會、產業發展署、數位產業署、國家衛生研究院

To Establish Taiwan Ecosystem for Elderly Health

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



活動網址

Themes: 3 major themes, 9 major fields



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

Venue: Taipei World Trade Center Exhibition Hall 1

Exhibition Scale: 800 booths Exhibition



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.

完整串聯高齡健康生態圈！推進高齡智慧服務、健康照護、快樂生活！



Healthcare[®]

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.

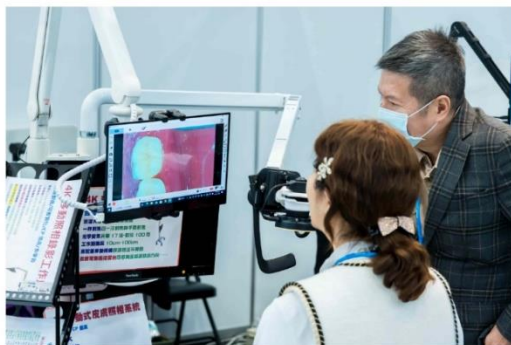
Medtech



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