



智慧醫療國際行銷策略

Prof. Chung-Liang Chien (錢宗良)
College of Medicine, National Taiwan University
Institute for Biotechnology and Medicine Industry

現職：

國立臺灣大學醫學院解剖學暨細胞生物學研究所教授
社團法人國家生技醫療產業策進會執行長



學歷：

臺灣大學動物學系學士 (1980-1984)
臺灣大學醫學院解剖學研究所碩士 (1986-1989)
美國哥倫比亞大學醫學院病理學博士 (1989-1995)

經歷：

日本東京大學醫學院客座研究員 (1999)
臺灣大學醫學院學生事務分處主任 (2008-2014)
臺灣大學醫學院國際事務中心主任 (2009- 2012)
臺灣大學醫學院副院長 (2011- 2014)
中華民國解剖學會理事長 (2010- 2014)
臺灣幹細胞學會理事長 (2013-2017)
行政院科技會報辦公室副執行秘書 (2012-2014)
國光生物科技股份有限公司監察人(公股代表) (2012-2014)
亞太經合會生命科學創新論壇(APEC-LSIF)委員會委員(2013-2016)
行政院科技部政務次長 (2014-2016)



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

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



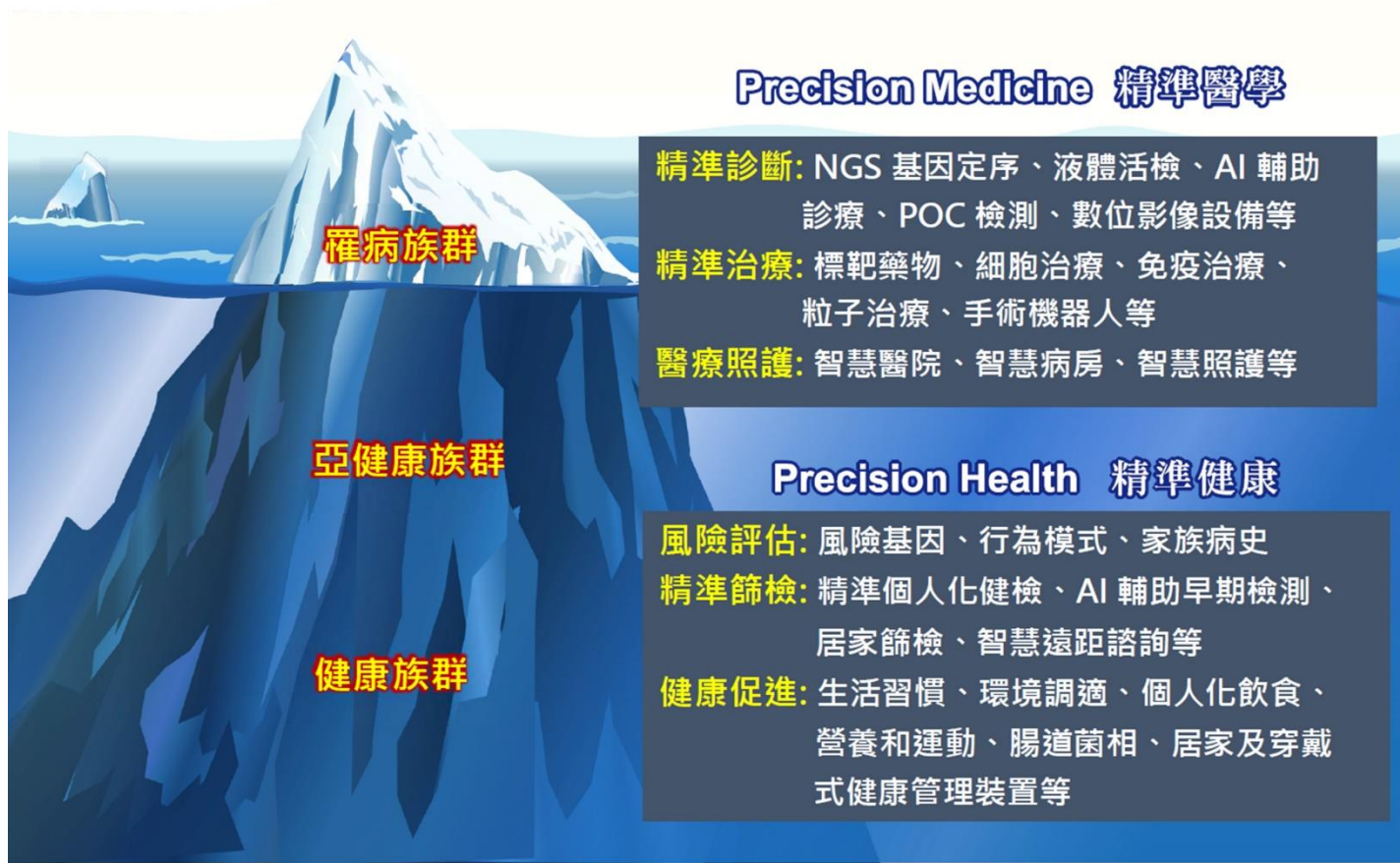
Awards & Certification

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

Startup Incubation

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

精準醫學與精準健康： 誰是未來大健康產業的藍海？



Precision Medicine 精準醫學

精準診斷: NGS 基因定序、液體活檢、AI 輔助
診療、POC 檢測、數位影像設備等

精準治療: 標靶藥物、細胞治療、免疫治療、
粒子治療、手術機器人等

醫療照護: 智慧醫院、智慧病房、智慧照護等

Precision Health 精準健康

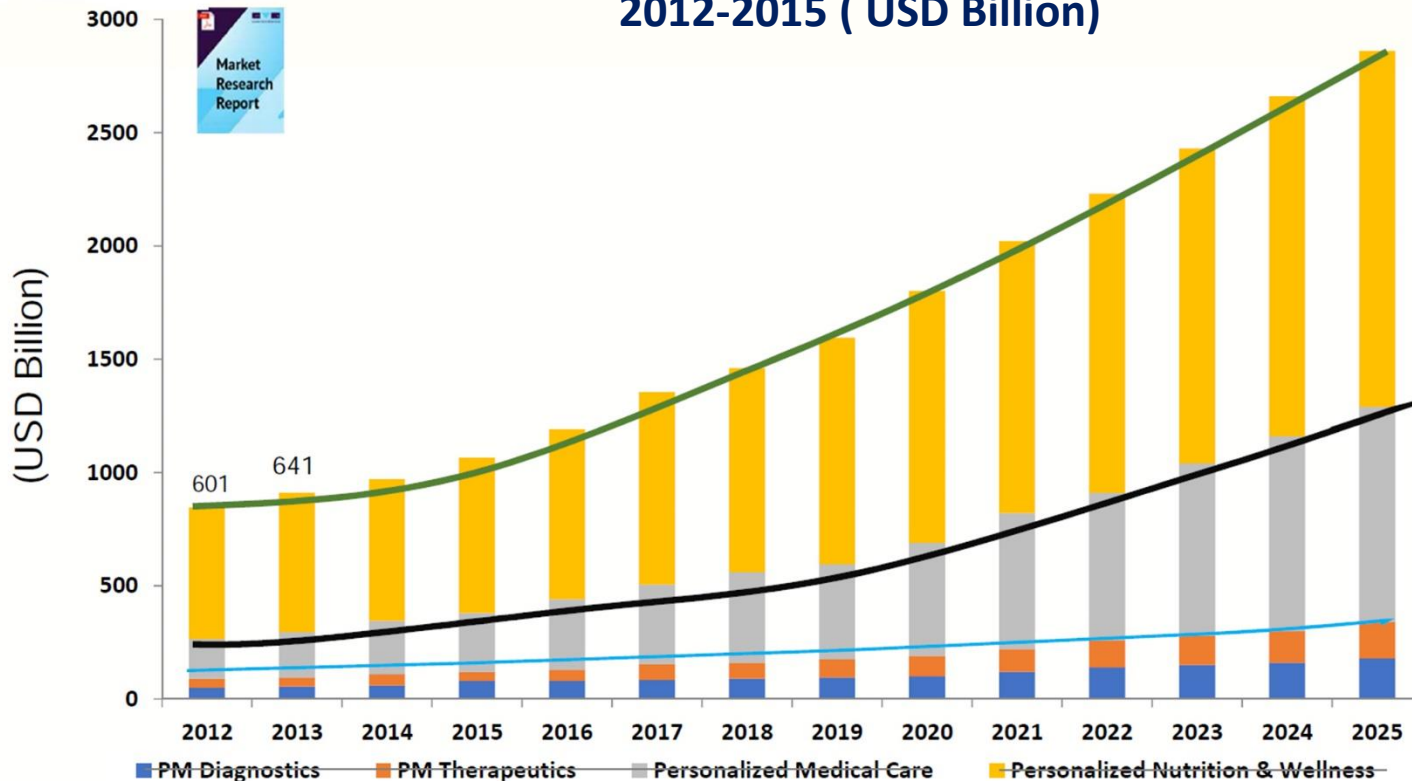
風險評估: 風險基因、行為模式、家族病史

精準篩檢: 精準個人化健檢、AI 輔助早期檢測、
居家篩檢、智慧遠距諮詢等

健康促進: 生活習慣、環境調適、個人化飲食、
營養和運動、腸道菌相、居家及穿戴
式健康管理裝置等

Global Precision Healthcare Market 精準健康產業之市場預測

2012-2015 (USD Billion)



精準醫療

健康福祉

Key drivers of Taiwan's healthcare industry

Advanced Medical Care



High Quality R&D and MFG



Strong ICT and Elec. Tech.





ICT



Hospital



Smart Hospital



Healthcare IoT
Platform



Health AI



Medical &
Wearable Devices



Hospital
Equipment

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's Leading ICT Players are actively diversifying businesses into healthcare Industry.



Smart Hospital, Medical Robot, AI/ IoT Solutions, Imaging, Diagnostics, Home care & rehabilitation, Gene Sequencing, Cell Therapy, etc.



No. 24 of Fortune Global 500
No. 1 of EMS Providers Global



No. 432 of Fortune Global 500
No. 5 of EMS Providers Global



Top 10 Electronic ODM Global
Top 3 manufacturers of TFT-LCD



Quanta Computer
No. 354 of Fortune Global 500



No. 404 of Fortune Global 500
No. 1 of NB manufacturer Global



One of leading Industrial
Computer Providers Global



Top 3 Manufacturers of
AMD Graphics Cards



One of Leading EMS-ODM
Manufacturers Global



No. 5 of Best Laptop Brands 2018



No. 4 of PC manufacturer Global
No. 4 of Best Laptop Brands
2018



Top 3 DLP Projector
Manufacturer
One of Leading LCD Backlight
Module Manufacturers Global



One of Leading Smartphone
Brands Global



Top 3 ODD manufacturers
Top 10 EMS Providers Global



World's leading smartphone
camera lens supplier



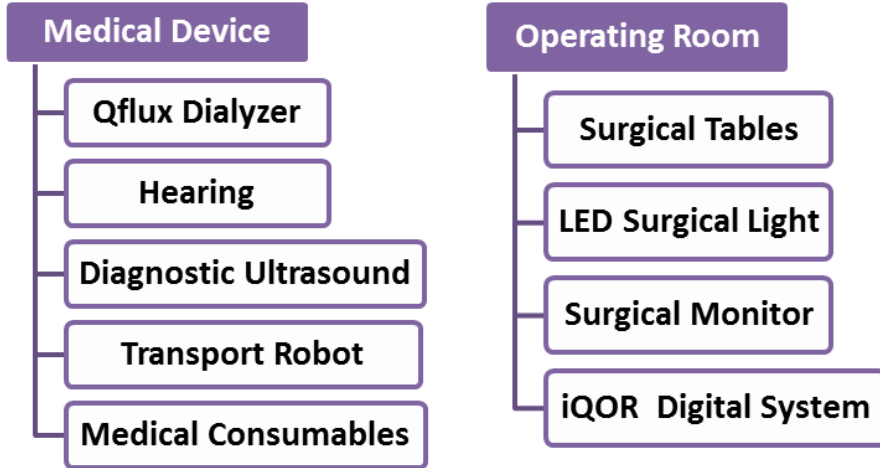
One of leader in power and
thermal management solutions
in the world



中華電信
Chunghwa Telecom

One of the Largest
Telecommunications Services
Taiwan

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

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



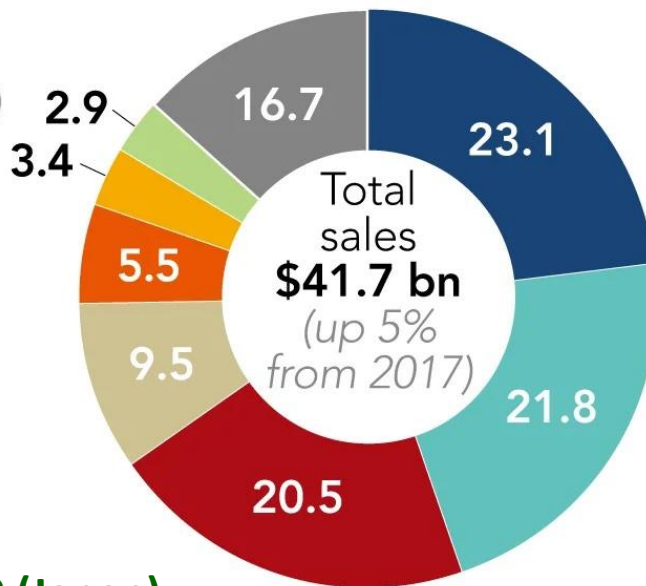
ICT Players launch
products and solutions:

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



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

- Siemens Healthcare (Germany) 2.9
- General Electric (U.S.) 3.4
- Philips (Netherlands) 9.5
- Canon (Japan) 5.5
- Fujifilm Holdings (Japan) 5.5
- Carestream Health (U.S.) 2.9
- Hitachi (Japan) 2.9
- Others 16.7



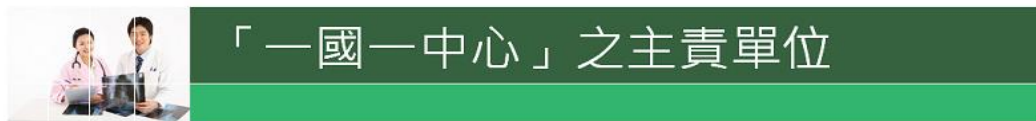
Source: Evaluate

8.4+ 9.5 =17.9 (Japan)

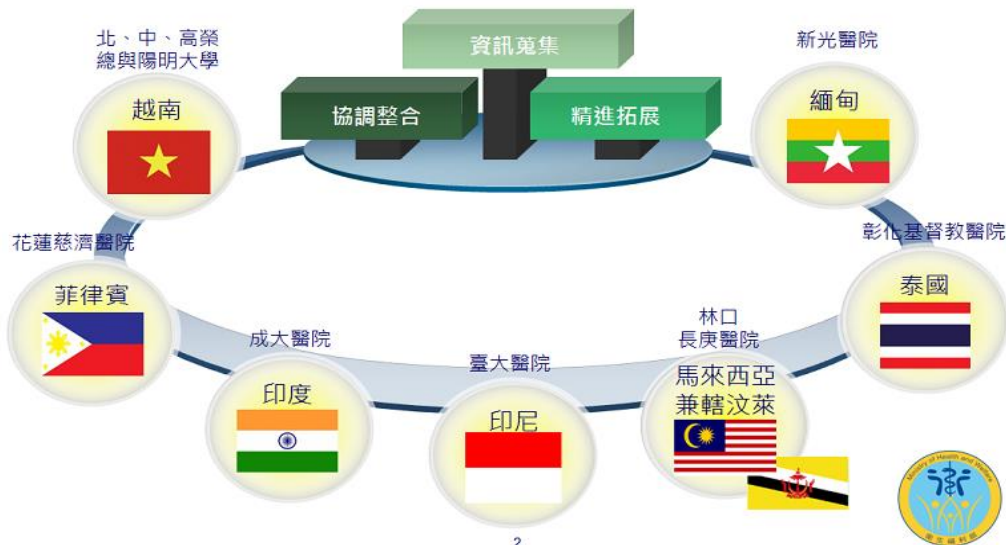
2月18日，富士表示：「兩家企業合併後，會將各自影像處理和人工智慧軟體和日立超音波、MRI 結合，**打包販售給醫療機構**。」 **To provide the total solution!**

- ❑ 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)
- India (成大)
- Vietnam (榮總)
- Indonesia (台大)
- Philippine (慈濟)



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。





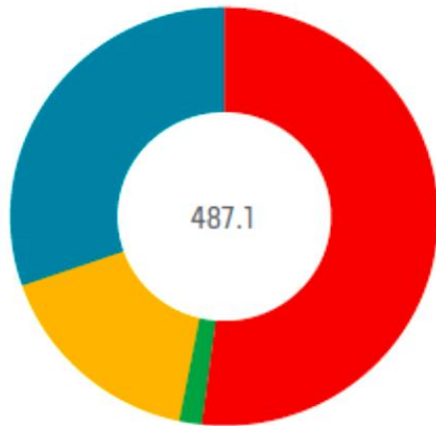
Singapore

SAVV 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

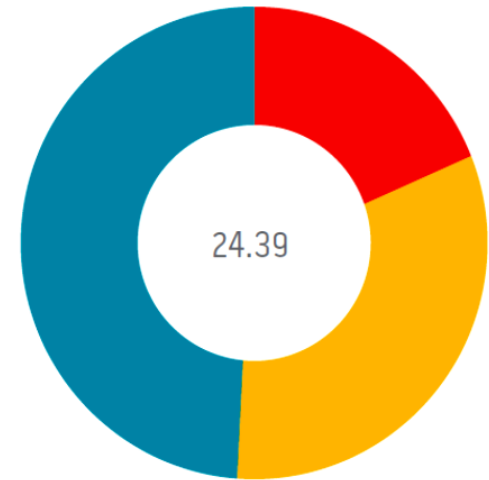
GDP: 387

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

India

Country Rank

49 / 54

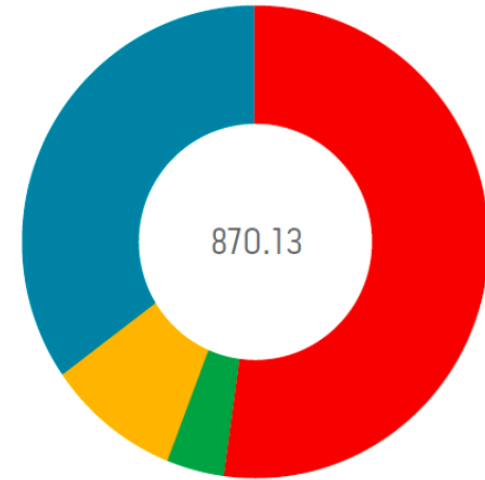
SAVV SC rank: 49

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

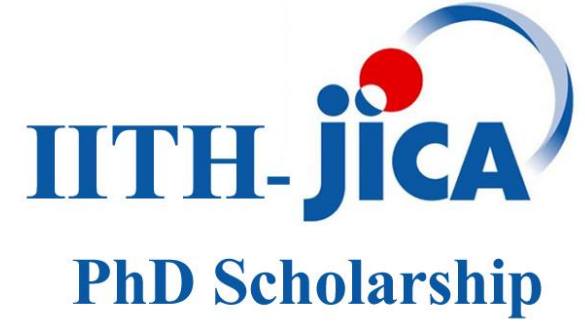
Indian Institute of Technology

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**.

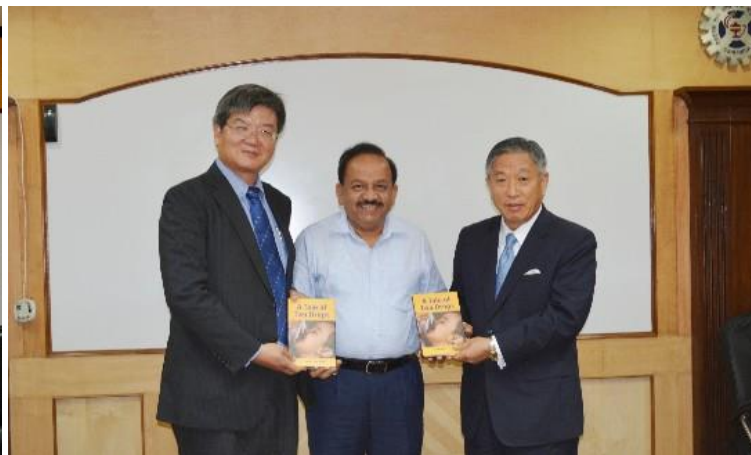
Dr. Harsh Vardhan was elected to the office of [Chairperson of Executive Board of the World Health Organization](#) from May 22, 2020.



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。

Bring together & Link together!



Healthcare EXPO · TAIWAN 台灣醫療科技展



106,769+



參觀人次



23,800+
國內專業人士



19,800+
國內一般民眾



30 位
國際產業協會



1,800 位
重磅會議論壇

8大主題

2020 醫療科技展

550個參展機構與企業、1580個展位



生技製藥
委託研發
製造服務



精準檢測
基因醫學
細胞治療



智慧醫院
醫材設備
供應鏈



特色醫療
主題



預防醫學
保健養身



智慧健康科
技與產品



防疫科技
主題



農業生技
食安健康

2大特展

InnoZone 創新技術特展 150個新創技術團隊



50大防疫創新科技特展



疫後新經濟·新契機

讓世界看見台灣醫療的能量 政府與產業攜手打造疫後醫療大健康產業新局



蔡英文 總統

健康產業發展的每一步，都是臺灣走向世界的重要一步！台灣醫療科技展超前佈署、已是我們跟國際交流，共同發展創新技術、智慧解決方案、數位健康科技的重要場域！政府將努力持續推動，讓臺灣成為全球數位醫療轉型的基地。



賴清德 副總統

身為醫界的一份子，期勉教育部或各大醫學院也應納入醫療科技的專業知識，為台灣戰備產業的重要一環智慧及精準醫療領域，培育源源不絕的專業知識人才。



大會主席 游錫堃 立法院長

台灣醫療科技展是全民的驕傲！半導體、面板、生技產業、數位內容等兩兆雙星產業，在這裡完整呈現跨領域合作成果，大健康產業將是繼半導體之後台灣走向國際最大利基。



教育部生醫產業與新農業跨領域人才培育計畫

Training Program for Interdisciplinary Talents of Biomedicine and New Agriculture

2021台灣醫療科技展-種子教師培訓說明會

針對精準醫學、智慧醫材、健康福祉、精準農業四大領域種子教師導覽培訓

種子教師將協助同學參觀展會，獲得產業見習之機會。

參與種子教師導覽之同學，將獲得主辦單位提供產業見習時數證明

歡迎各領域教師帶領同學參觀台灣醫療科技展！

培訓對象

本計畫各領域推動中心及夥伴學校計畫主持人及各校有興趣之教師

培訓時間

110.11.15 (一) 下午14:00-16:00

培訓地點

臺灣大學醫學院 101講堂 (台北市仁愛路一段一號)

種子教師培訓說明會報名截止日期110.11.05 (五)

有完成報名者將獲得主辦單位提供

種子教師導覽手冊及VIP展會導覽證

展會後主辦單位將提供實際參與導覽教師產業見習教學證明



說明會報名QR Code



2020 年

計畫報名：**893**人

自由報名：**463**人

Healthcare[®] 2021.12.02-12.05 EXPO · TAIWAN 台灣醫療科技展



Please Book your 2021 calendar



更多2020展會亮點影片