



臺灣精準健康產業的現況

錢宗良

Chung-Liang Chien, Ph.D.

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



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PDF檔下載

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？



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

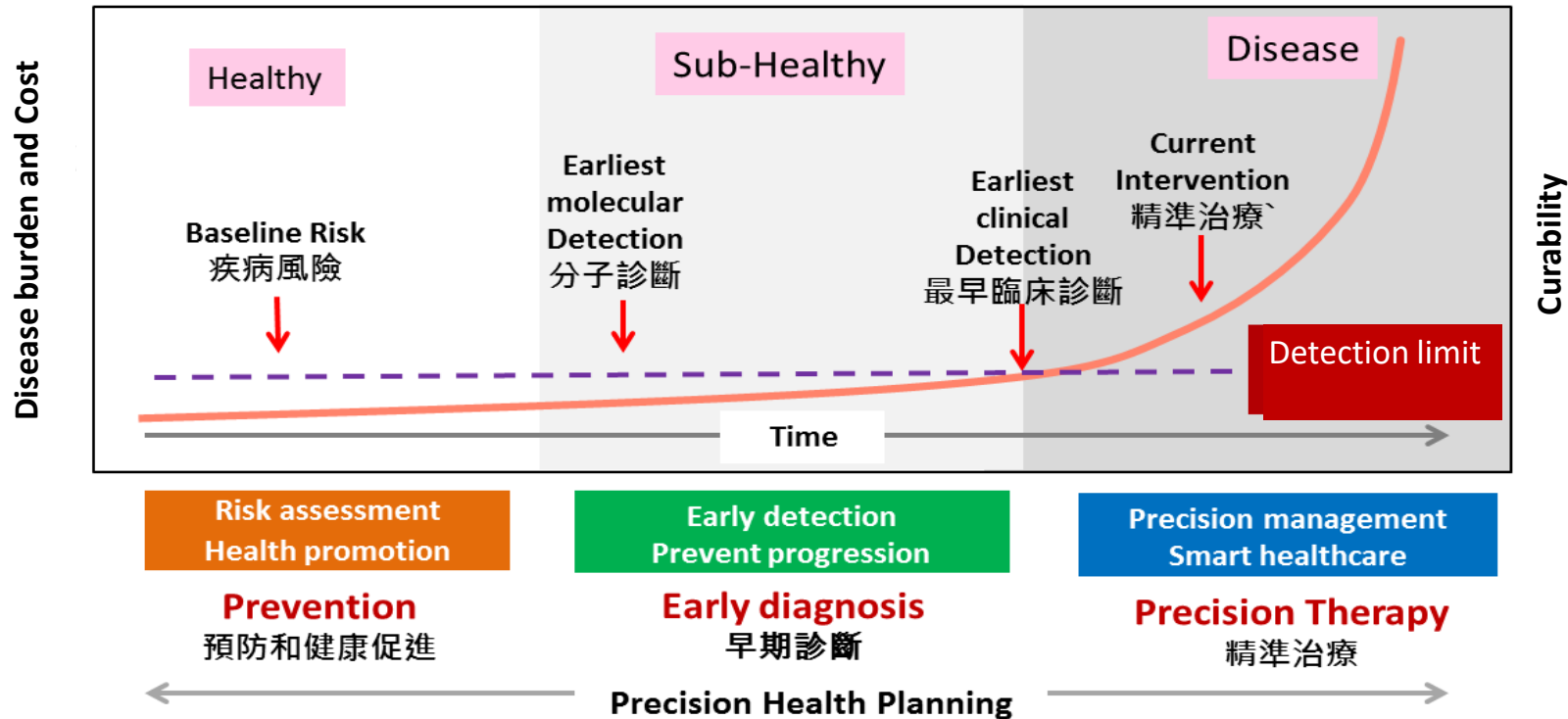
風險評估: 風險基因、行為模式、家族病史

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

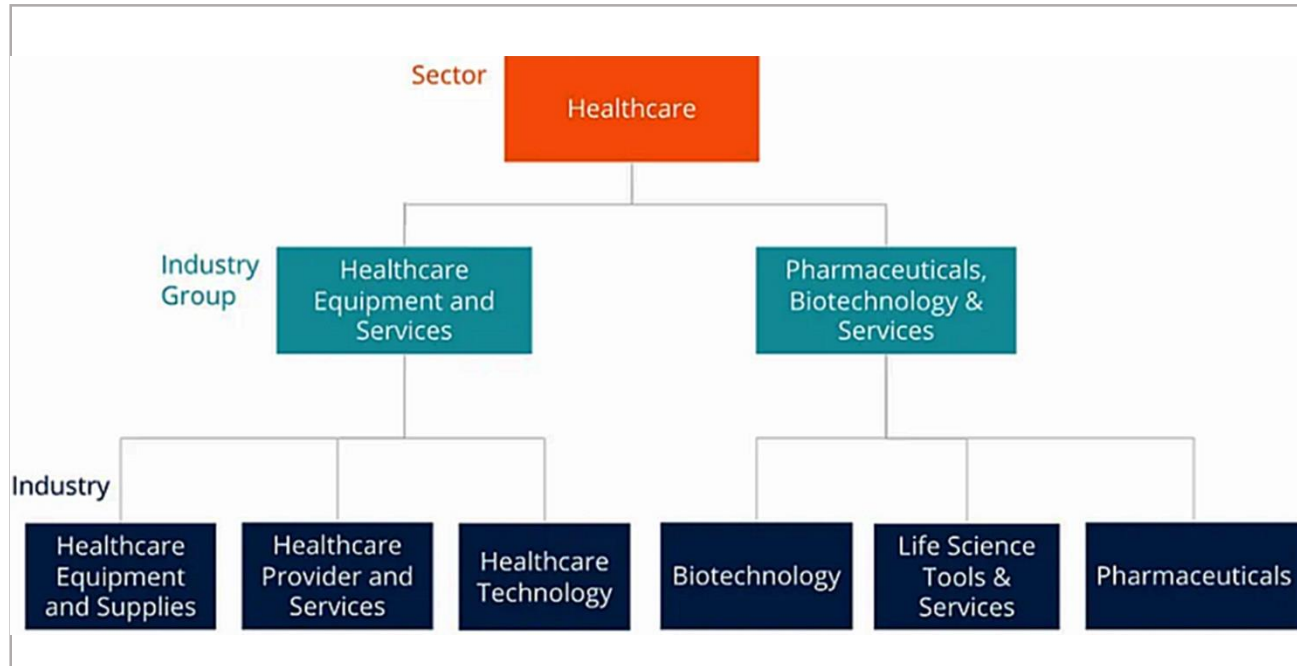
Healthcare from disease treatment to prevention

- 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:

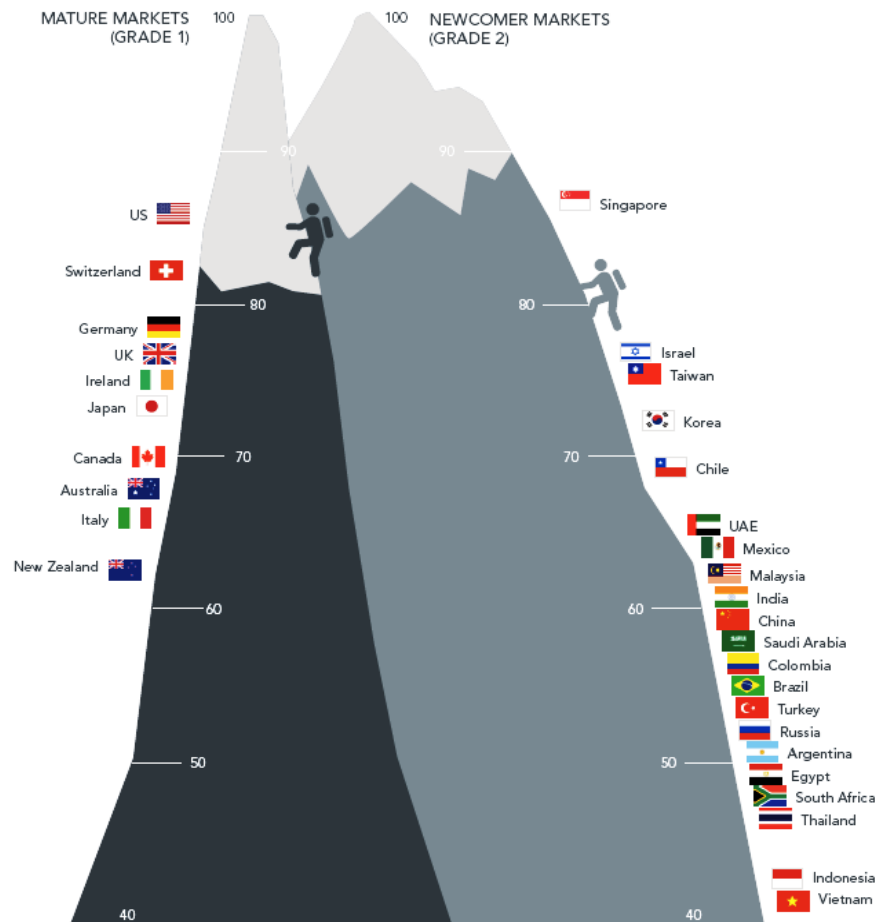
- International Healthcare
- Bio-pharmaceutical
- Medical device
- Regenerative medicine
- Smart health
- Precision medicine
- Sports medicine

上課大綱

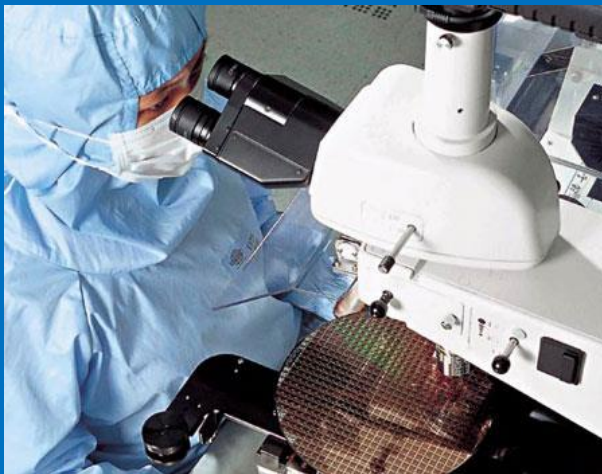
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Taiwan Core Competences

- 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)



ICT



Hospital



Smart Hospital

Healthcare IoT
Platform

Health AI

Medical &
Wearable Devices

Hospital
Equipment

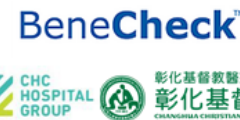
Cross-industry cooperation at a glance



- 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

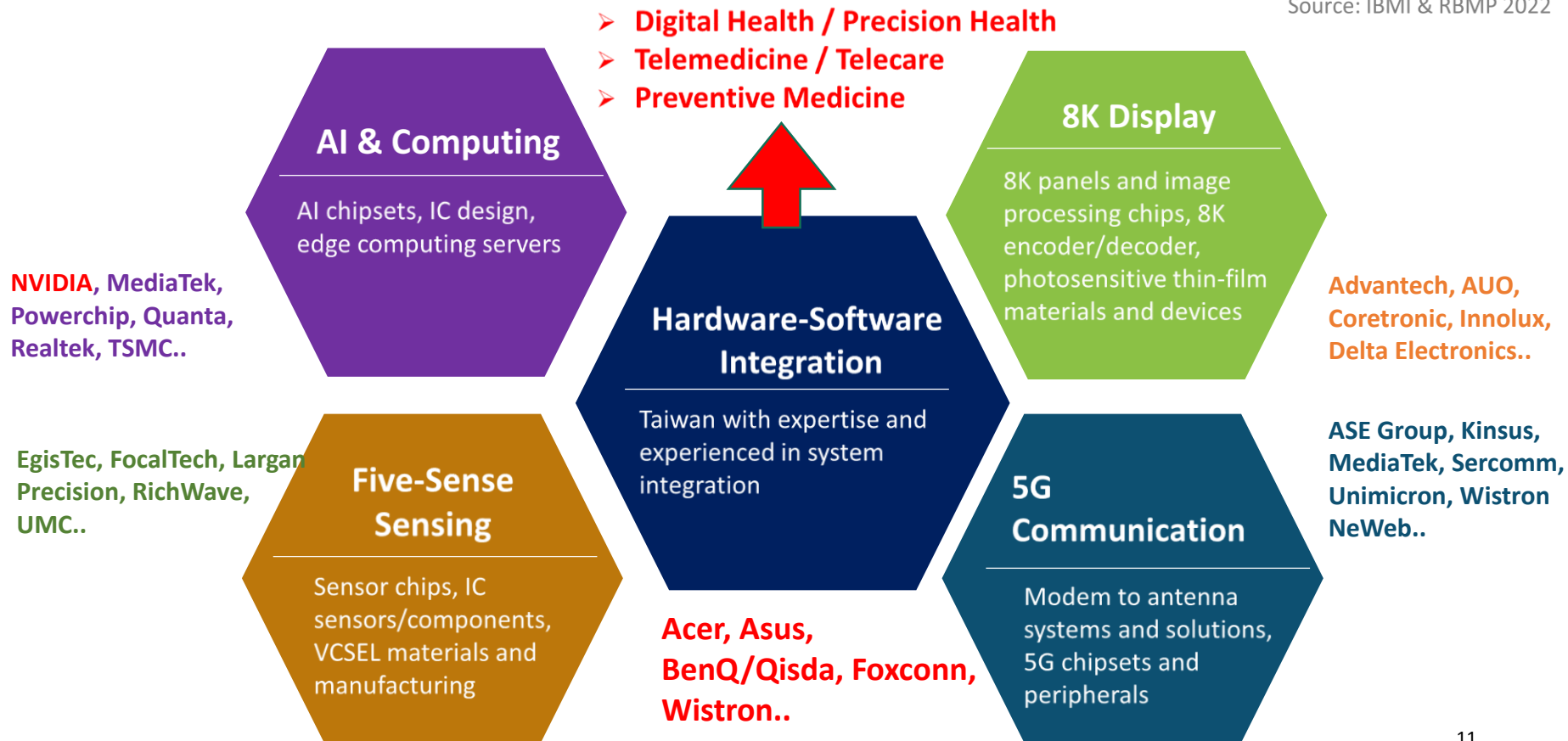
Precision Healthcare Industry

	Mobile health	Medical equipment	Smart hospital	Gene/cell therapy	Biomedicine	
Companies						
Product pipelines	■ Tele-healthcare ■ IoT solutions ■ Wearables ■ Health management	■ X ray/ultrasound ■ Micro CT ■ Surgical robots ■ Capsule endoscopy ■ Hemodialyzer ■ Pathology/AI Image ■ Vital sign monitor	■ Smart ward/operating room ■ Surgical VR ■ AI solution ■ HMS ■ EMR / EHR ■ Medical display	■ DNA sequencer ■ DNA microarray ■ Protein & genetic testing ■ CTC system ■ Cellular therapy	■ AI chip ■ Biochip for gene sequencing ■ RF & Wireless chip ■ Biosensor ■ Display component ■ Organic semiconductor	
Areas of application						

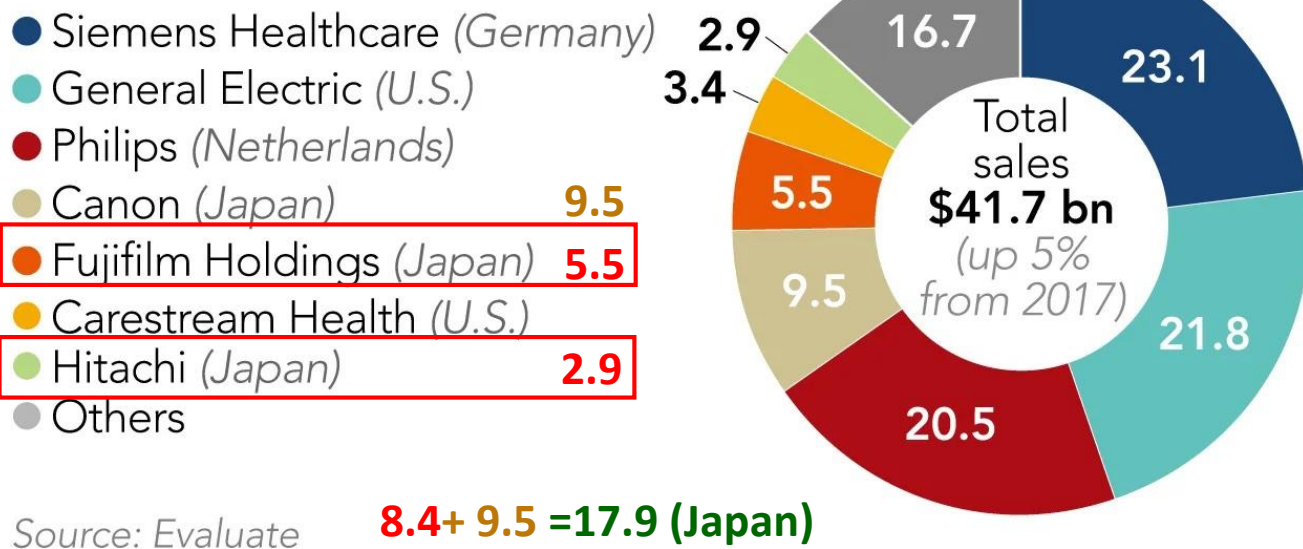
Taiwan Industry Overview

Market Players and Focus Areas

Source: IBMI & RBMP 2022

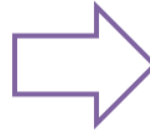
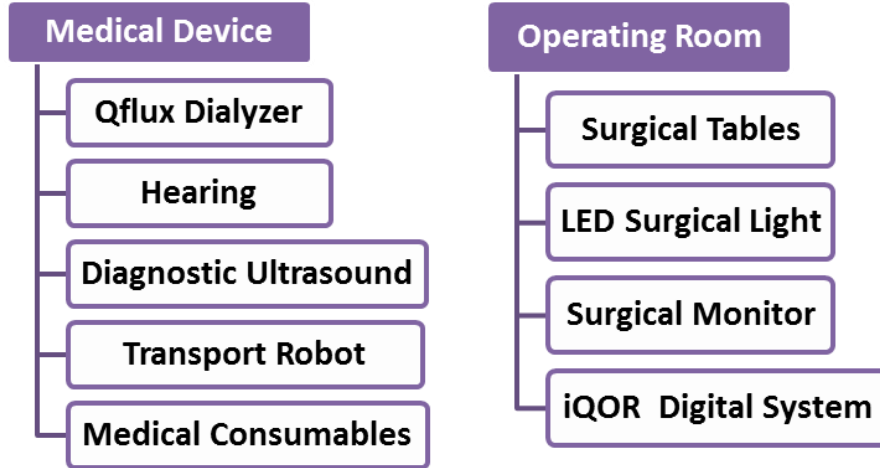


Diagnostic imaging equipment global market share by sales (2018, in percent)



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

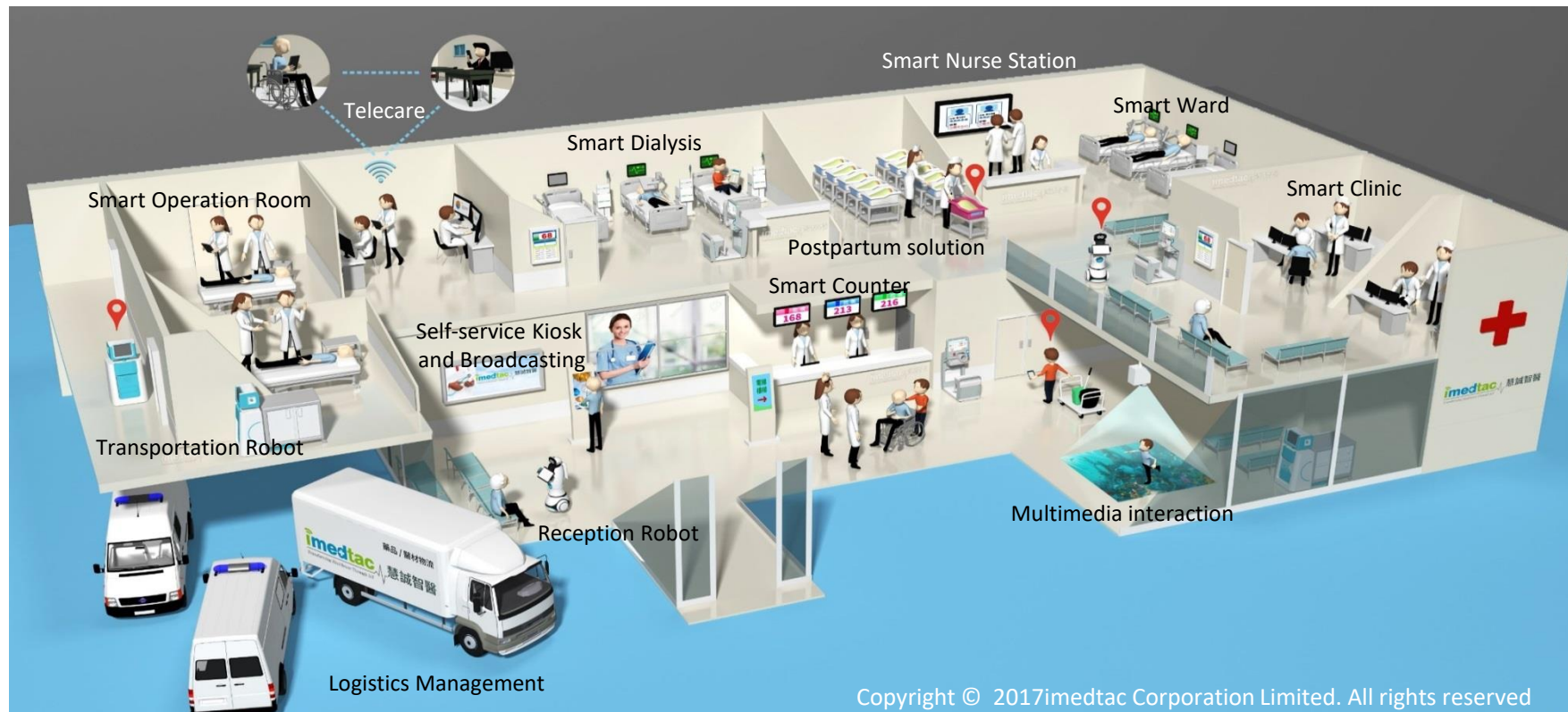
Smart Ward

Health Management System

Long-Term Care Monitoring Solution

Integrated Solutions in Smart Hospital

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



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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

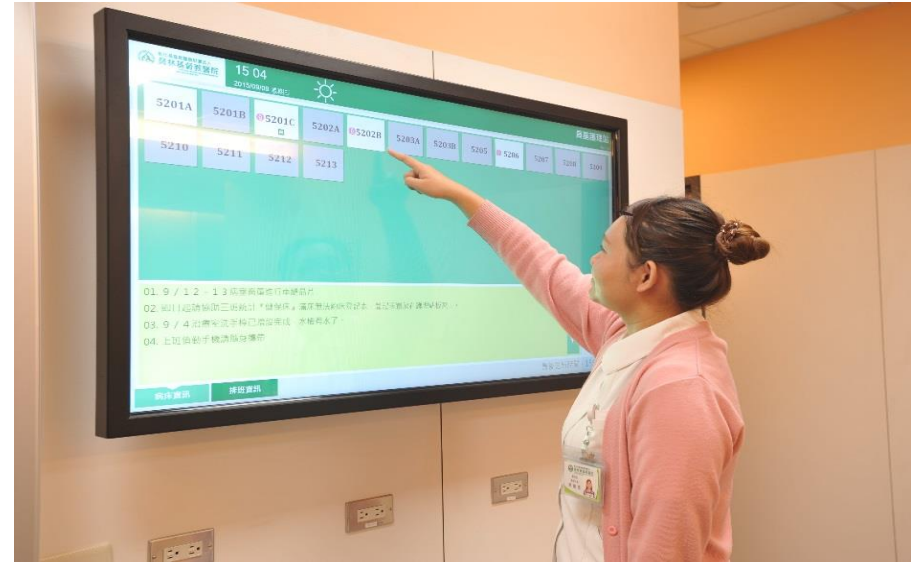
- ◆ Interactive environment
- ◆ Disclosure real-time information
- ◆ Treatment schedule



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



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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



台新金控
Taishin Holdings



富邦金控
Fubon Financial



國泰金控
Cathay Financial Holdings



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.

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
聯勝科技

PSC
力晶半導體
Powerchip Semiconductor Corp.

iKala

Research & development

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



400

Core Members



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



彰化基督教醫院
Changhua Christian Hospital



衛生部 桃園醫院
Yuan-Tao Hospital, Ministry of Health and Welfare



長庚醫療財團法人
Chang Gung Medical Foundation



中國醫藥大學附設醫院
China Medical University Hospital



亞東紀念醫院
FAR EASTERN MEMORIAL HOSPITAL



花蓮慈濟醫院
Hualien Tzu Chi Hospital



臺北市立萬芳醫院·委託臺北醫學大學辦理

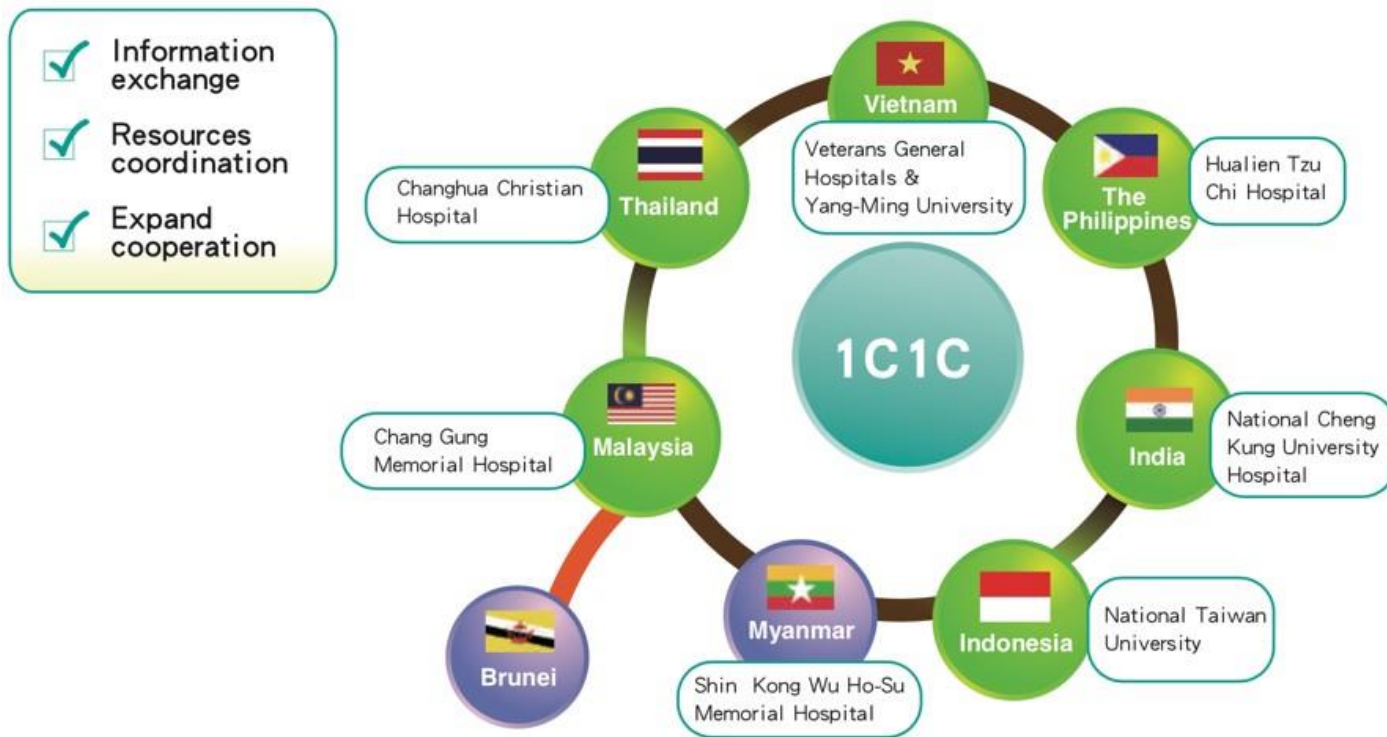


8th Healthcare[®] EXPO • TAIWAN



Taiwan offer Total solutions to assist Asia countries to build smart hospitals or improve hospital management effectiveness.

A key initiative: The 1 County 1 Center (1C1C) Project



► One medical center from Taiwan to serve as the focal point for cooperation with one partner country



《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

Thailand & Taiwan Bilateral Cooperation

MDA2019

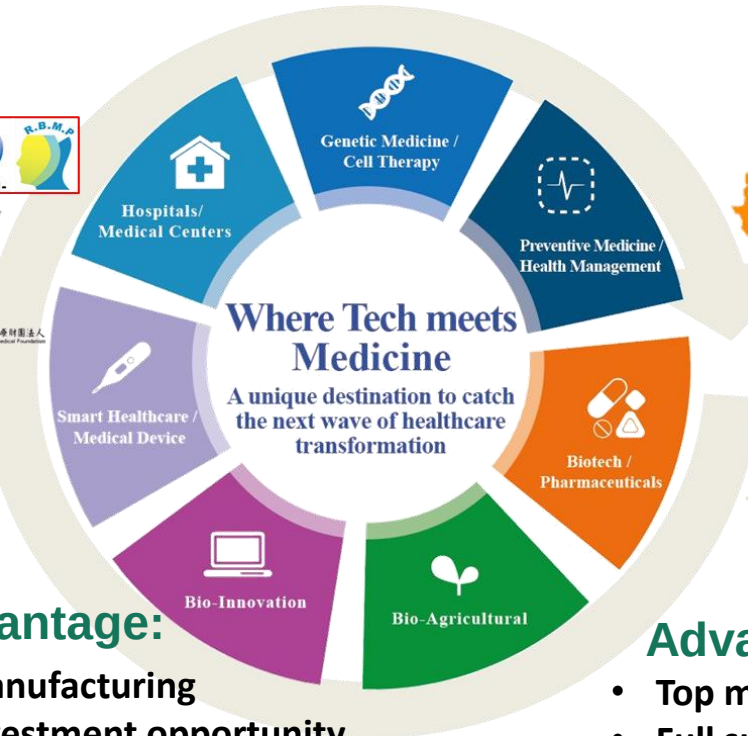


Visit CCH 2018



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



2024 台灣泰國智慧醫療會議 (2024/11/22 曼谷) -

- **ESG在醫療領域的落實**：與會者共同探討如何在醫療機構導入ESG概念，從綠色醫院的營運、永續供應鏈的建立，到社會責任的履行，打造更永續的醫療體系。
- **智慧醫療解決方案**：論壇展示了多項創新的智慧醫療解決方案，例如遠距醫療、AI輔助診斷、精準醫療等，如何協助改善醫療品質、提升效率，並降低碳足跡。
- **跨國合作與人才培育**：台泰雙方簽署多項合作意向書，共同推動智慧醫療人才培育、技術交流與產業合作，加速區域醫療產業的升級轉型。
- **永續健康的新願景**：論壇勾勒出未來智慧醫療的發展藍圖，強調以人為本、以健康為中心，透過科技創新與跨界合作，打造一個更健康、更永續的未來。



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](#).

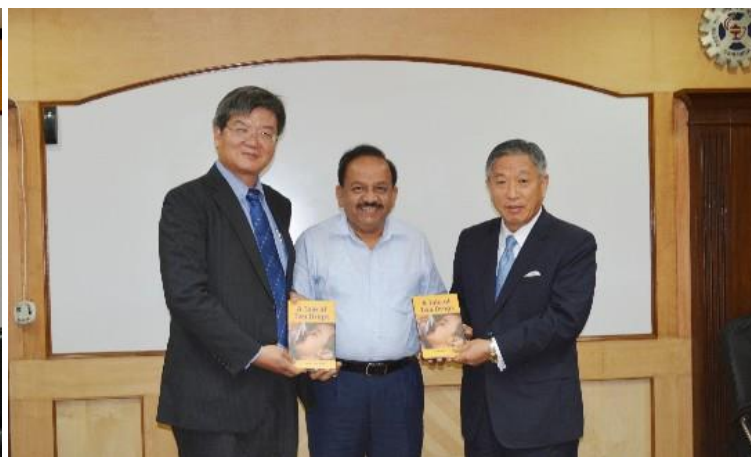
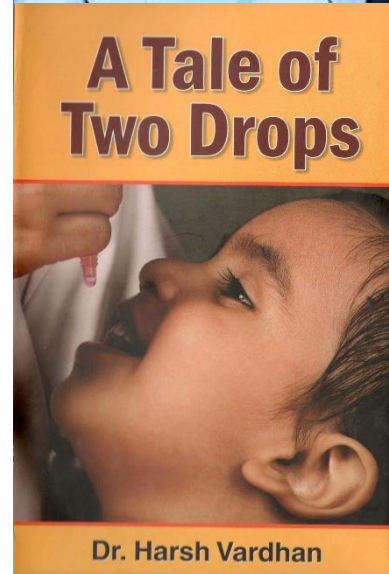
Source data from *Scientific American Worldview* (<http://www.saworldview.com>)



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.

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.



2015-07-20 科技部錢宗良次長及田中光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。

2025年 印度生技商拓團 (02/23-02/24 海德拉巴 Hyderabad)



訪問團抵達海德拉巴機場

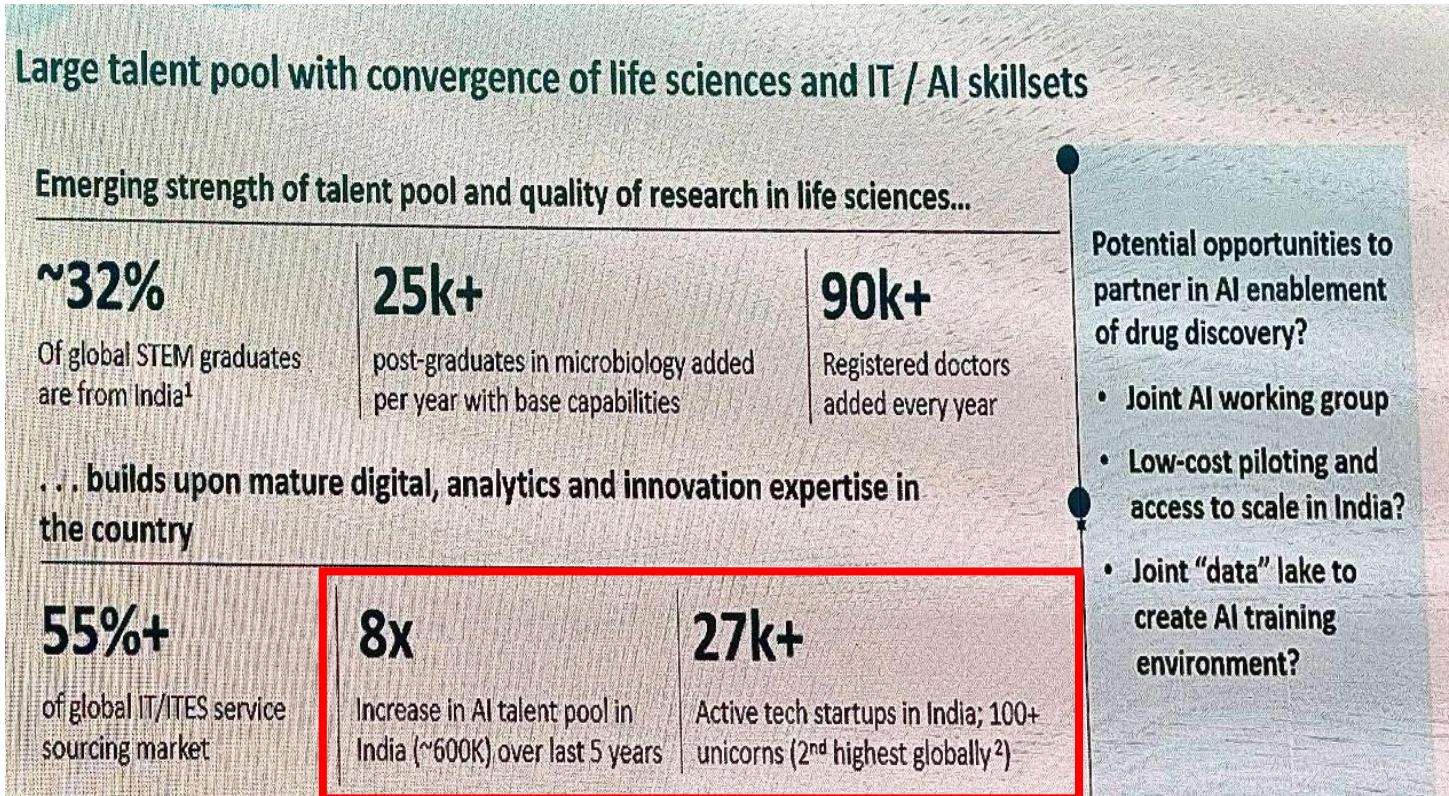


參訪基因谷生技園區 (Genome Valley)



參訪園區中最大的委託開發暨製造服務 (CDMO)公司 Syngene International。

2025年 印度生技商拓團 (02/24)



印度在結合生技與人工智慧 (AI) 人才培養的數據資料。

2025年 印度生技商拓團: India CRDMO Syngene (02/24)

Thirty+ years of 'Putting Science to Work' and providing solutions for a global client base



Syngene 提供的
Plantable筆記本跟筆，
符合國際永續發展倡議

400+

Active
clients

>2 Mn

Square feet of
Infrastructure

8500+

Global
workforce

87

Recent client and
regulatory audits¹

~\$4 Bn

market cap

>80%

green
power¹

450+

Patents
IP created
for clients

We have a strong track record as a partner to the leading pharma players globally

Syngene 服務國際**400+**顧客外，擁有超過**450**項專利，使用超過**80%**綠能在整體產線上

Branding Taiwan



Healthcare[®]
EXPO · TAIWAN 2025.12.04-12.07



Thank you for your attention