



Insight of Taiwan's Healthcare Ecosystem

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CEO, Institute for Biotechnology and Medicine Industry

Institute for Biotechnology and Medicine Industry (IBMI)



Established Year: 2002

Board of Members: Leaders from Academia, Medical Centers, and Biotech & ICT Industries

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



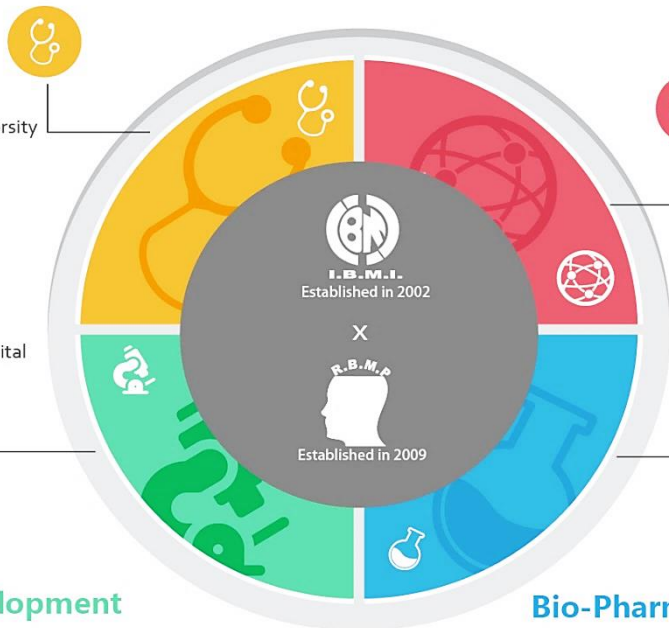
Supervisor
Wei-Jao Chen

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

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



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
聚誠科技

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

Bio-Pharmaceutical

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



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

Awards & Certification

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

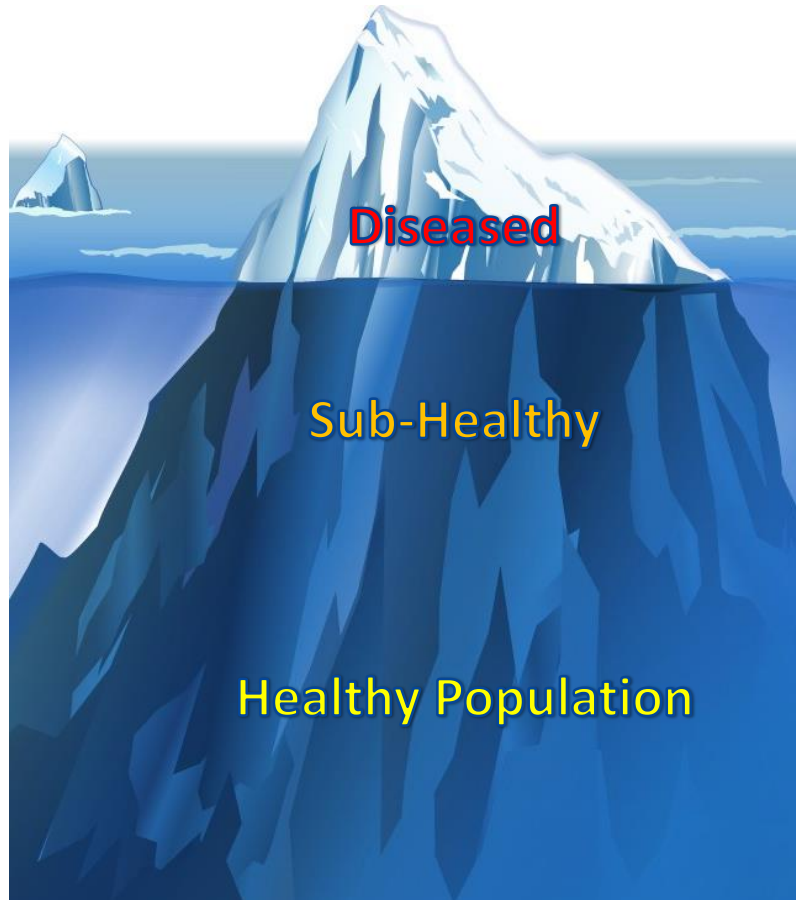
Partnership & Collaboration

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

Startup Incubation

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

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 】

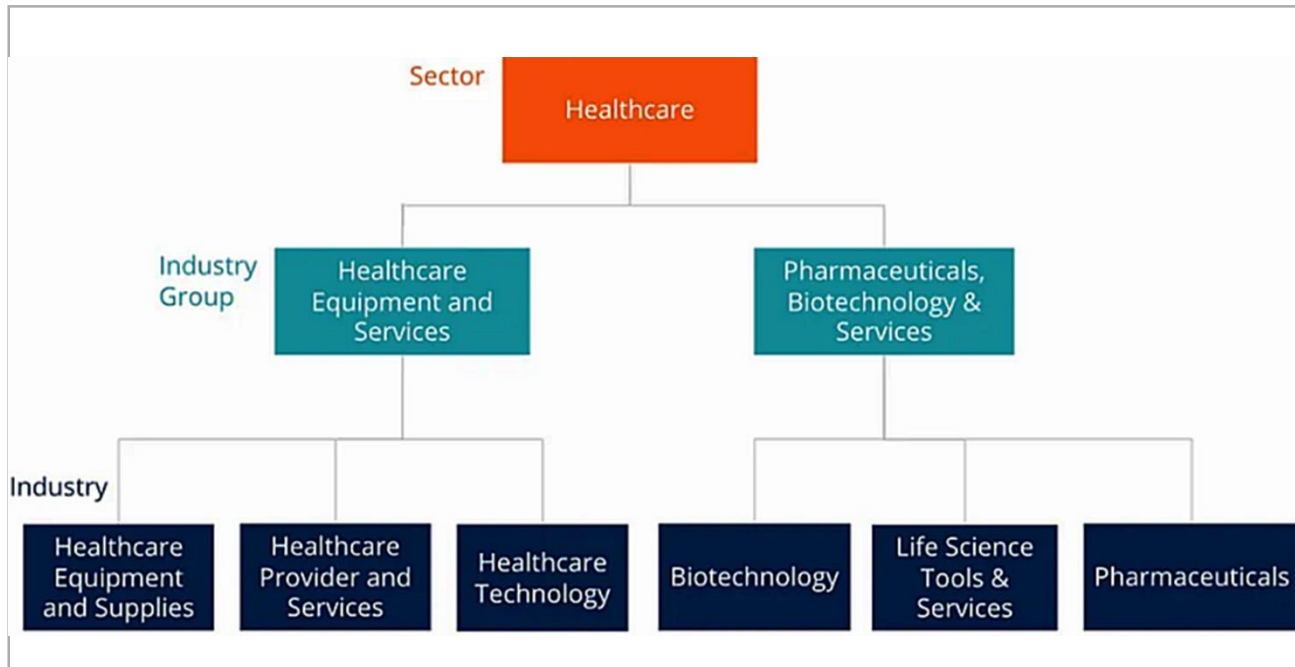
Risk Assessment : Genetic risk, Behavioral Patterns, family history *etc.*

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 sector by GICS definition

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

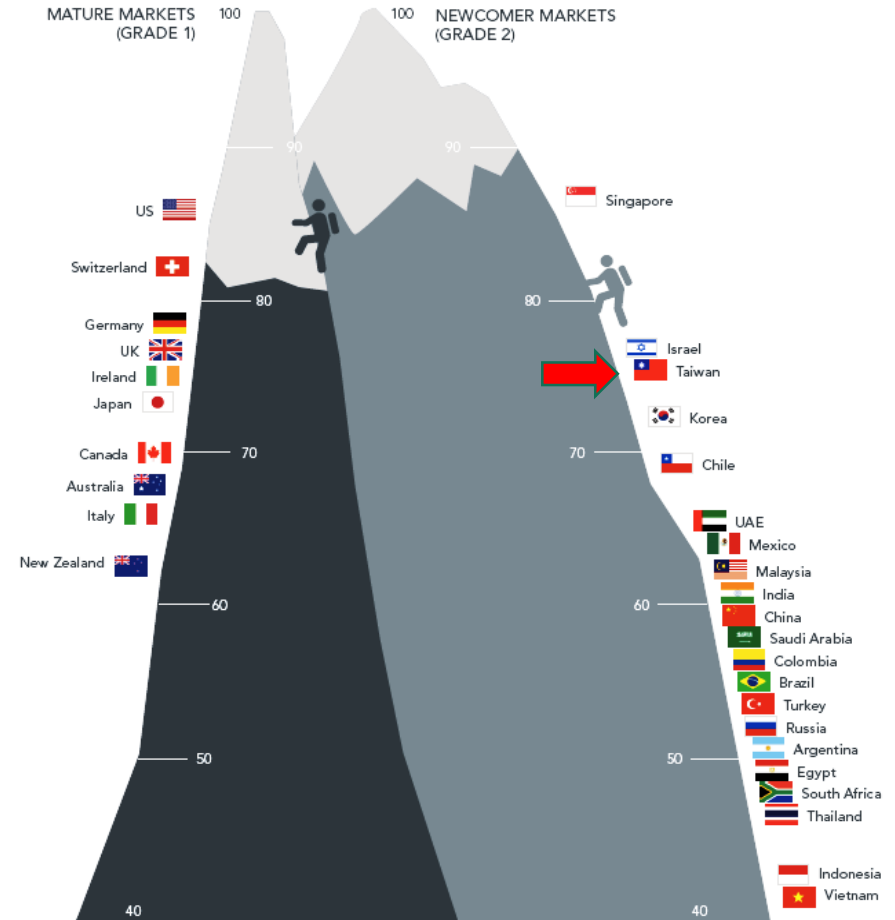


Global Markets:

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

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 25 years
- ❖ 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



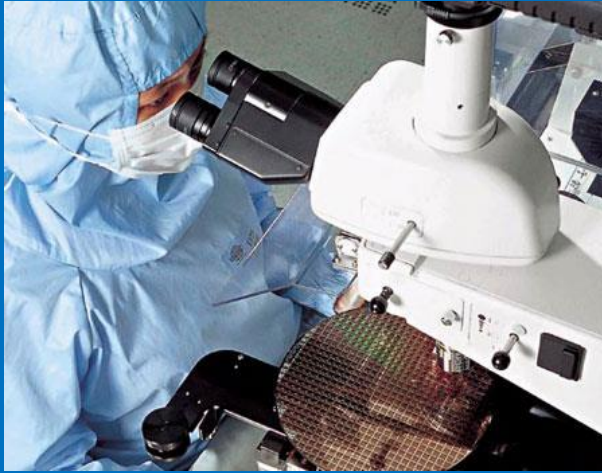
Strong ICT manufacturing capabilities

- ❖ 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

Taiwan ICT giants setting foot in healthcare

	Mobile health	Medical equipment	Smart hospital	Gene/cell therapy	Biomedicine
Companies					
Product pipelines	<ul style="list-style-type: none"> ■ Telehealth ■ IoT solutions ■ Wearables ■ Health management 	<ul style="list-style-type: none"> ■ X ray / ultrasound ■ Micro CT ■ Surgical / service robots ■ Capsule endoscopy ■ Hemodialyzer ■ Molecular pathology ■ 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					

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

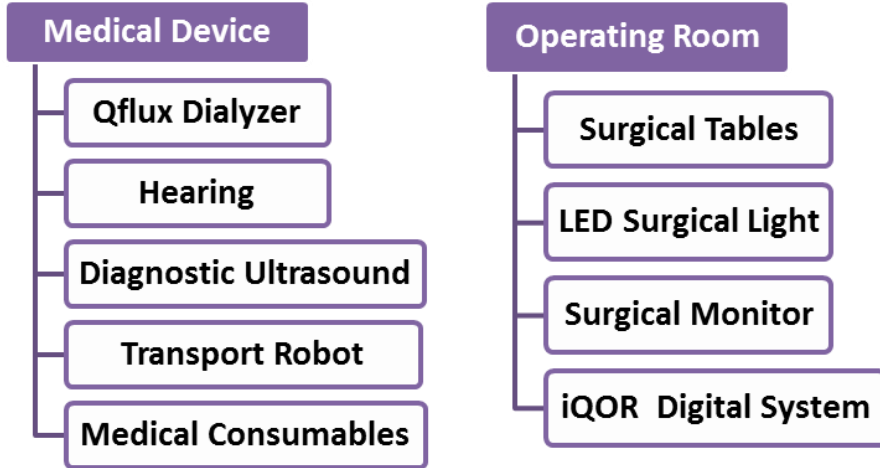


- 1) Miniaturization of medical equipment
- 2) Exoskeleton / assistive devices
- 3) AI dialysis / medical AI imaging
- 4) Digital pathology / health management



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

Featured Products



Solutions

Smart Operation Room



ODM / OEM of
Medical Device

Other Smart Healthcare Solutions

Fitness System

Smart Wearables

Smart Ward

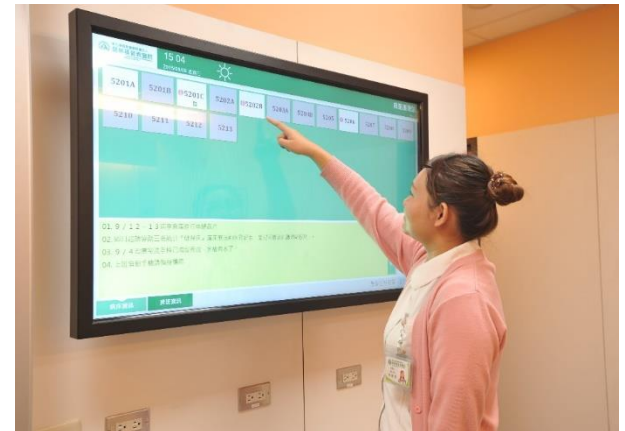
Health Management System

Long-Term Care Monitoring Solution

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



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

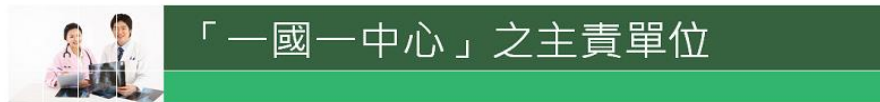


- Taiwan has become the most important exporting **Smart Hospital Solution** country in Asia.
- Offer **total solutions** to assist Asia countries to build smart hospitals or improve hospital management effectiveness.

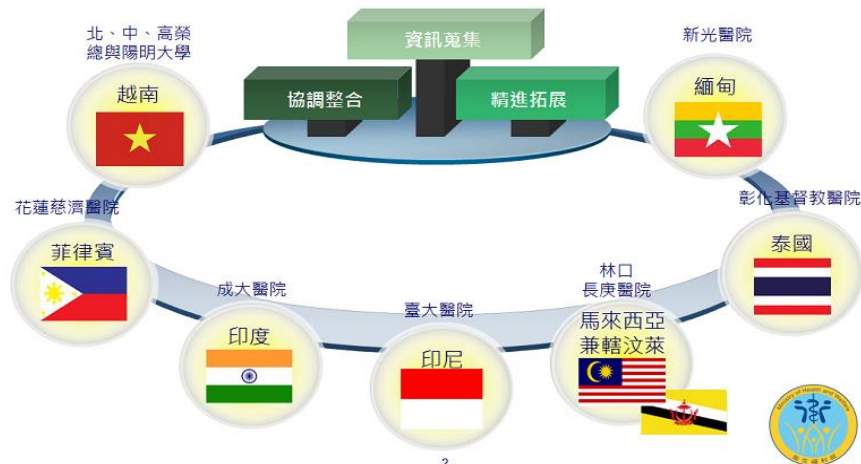
- Thailand (彰基)
- Malaysia (長庚、中國醫)
- India (成大)
- Vietnam (榮總、高醫)
- Indonesia (台大、亞東)
- Philippine (慈濟)
- Myanmar (新光)




**Taiwan Medical and Healthcare
Regional Partnership**
 NSP Project Office, MOHW



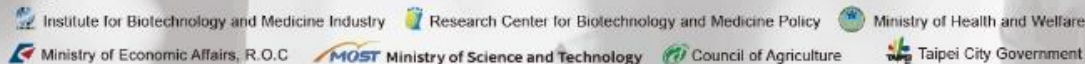
透過委託具醫學中心量能之機構，在當地執行一國一中心計畫。



Where Technology and Healthcare Shape the Future

- Connecting Supply Chains of High-Tech, Medical Institutes, Bio-Pharma and Medical Devices
- Getting Ahead in Healthcare Business booming in the APAC region

Organizers



Healthcare⁺
EXPO · TAIWAN
2022.12.01-12.04
Hall 1, Taipei Nangang Exhibition Center

Please Book your 2022 calendar: Dec. 1-4

I. About

Innovation in Healthcare Driven by Medical Technology

“Hospitals pave the way to connecting upstream-downstream medtech supply chains, being an axis on which the industry, technology development revolves. The government will keep on track investing its efforts into a promising future of precision medicine.” — **President Tsai Ing-Wen**

“The coming of post-Covid era will further Taiwan’s leading position in terms of healthcare. It is envisioned that the country will continue to stay at the forefront of healthcare with its technological strength.” — **Shyi-Kun Yu, President of the Expo General Assembly**



I. About

Innovation in Healthcare Driven by Medical Technology

“The Expo represents the emergence of science, clinical research, cutting-edge technology, medicine and their applications altogether, steering Taiwan’s healthcare industry towards breakthrough and change.” — **Chi-Huey Wong, President of IBMI**

“While AI computing, 5G and information technology are advancing at a lightspeed, the transformation in smart healthcare are counting on innovation in operational models.”

— **Barry Lam, Vice President of IBMI**

“Doctor-invented technologies and health tech startups will bring a momentum to the industry. They can shape the healthcare landscape and address the patient’s needs and the bottleneck in disease treatment.” — **Pan-Chyr Yang, Vice President of IBMI**

“Hospitals spearhead the cross-disciplinary collaboration with their clinical experiences, data and scientific discoveries, they are the engine to energise novel products and solutions.”

— **Chang-Hai Tsai, Vice President of IBMI**



Unleash the Power of Semiconductor: The New Era of Digital Health Technologies



威世頓創始人 主席兼
 Ron Chen, CEO, Vice President,
 i360.
 聯發科 總經理暨首席副總裁
 Robert Huang, Vice Chairman,
 MediaTek Corp.
 Medtronic
 Head of Global Health Solutions
 Vertical Health and Life Sciences
 Organizations at Intel Corporation
 亞細亞全球醫療與生命科學部
 副總裁暨全球總經理
 Jerry Kao, Global Chief of Strategy
 Officer and President of Health, IBM.
 聯發科 主席 兼
 Jason Chen, Chairman and CEO,
 AUK.
 臺灣國立中央大學 醫材與生醫系
 特聘教授 兼
 Tom-Cheng Chang,
 Chairman, GeneCode Foundation
 聯發科 主席 兼 聯發科電子學院
 院長
 Park Huang, Chairman, President,
 Semiconductor Manufacturing Corp.
 (SMC)

From CPUs, GPUs to healthcare ASICs, from AI, HPC to 5G, from telecare to mobile health applications- the forum discussed how semiconductor technologies empowered and changed the face of the healthcare industry, sparked and incubated medical innovations and shaped the future of digital transformation in healthcare at a lightspeed.



聯發科總經理 主席兼
 Ken Sun, General Manager at
 Microsoft Taiwan
 聯發科總經理 兼聯發科
 Ben Chong, Vice President, Wireless
 Medical Technology Corp.
 亞細亞總經理 兼總經理
 Steven Wang, VP Business
 Development Strategy
 Supermicro
 亞細亞總經理 兼總經理
 Grace Wang, Vice President of GM,
 Taiwan at Intel Corp.
 臺灣國立中央大學 醫材與生醫系
 特聘教授 兼
 Joe Hsieh, COO, Senior VP, Co-Head
 of Open Platform Rn, ASUS

Global Participation 2021

- Wistron
- Acer
- PSMC
- Asus
- Wistron Medical
- Intel
- Microsoft
- Supermicro
- SEMI, Taiwan
- NCKU Hospital
- SanCode Foundation

III. Exhibitions: Smart Hospital, Medical Devices & Equipment

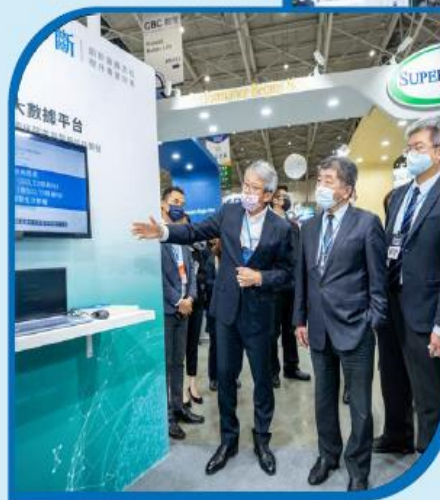
Industry and Hospital Partnered to Accelerate Digital Transformation

Multinational health tech and medical device companies, distributors, CDMO and CROs come together with problem-based, patient-centred, workflow-optimised products and solutions on offer.

- Smart hospital solutions
- Telemedicine, non-contact technologies
- Health IT systems
- AIoT, cloud-based applications
- Hospital equipment, surgical tools & supplies
- Medical device components & parts
- Contracted services, clinical validation
- Screening, diagnosis, implants

📍 4th Floor

👤 Intl' Exhibitors & Professionals



III. Exhibitions: Healthy Ageing & Age Well

Older Adults' Wellbeing and Quality of Life

The exhibition includes technology in elderly care improves mobility and memory loss, and products that enhance physical, mental health of seniors.

- Healthy diets, nutrients and functional food
- Smart home & appliances
- Age-friendly indoor & outdoor activities
- Anti-ageing regimens
- Chronic disease prevention & management
- Smart solutions in long-term care

📍 Ground Floor

👤 Consumers



III. Exhibitions: Smart Health Tech & Preventive Medicine

Lifestyle with Smart Health Management

This pavilion displays consumer health products for people in optimal and suboptimal health, helping them boost immune health, manage health risk and create a healthy lifestyle.

- Wearables, mHealth
- Health management software & apps
- Environmental monitoring for health & wellness
- Nutrition, supplements, immune health
- Health services for individuals & enterprises
- Epidemic control and prevention
- Anti-bacterial and anti-viral products

📍 Ground Floor

👤 Consumers





Welcome to TAIWAN

Thank you!