

行政院所屬各機關因公出國人員出國報告書

應邀至泰國參加
SATU Summit on Industry-Academia Collaboration
演講介紹台灣科學園區之創新產業聚落

服務機關：科學工業園區管理局

職 稱：局 長

姓 名：黃得瑞

出國地點：泰國曼谷

出國期間：96/11/19 - 96/11/22

摘要

積極參與國際事務及推動產學園合作一直是園區管理局重要的任務之一。此次應邀參與 SATU Summit on Industry-Academia Collaboration 由大會提供差旅費用並在會議主題「產業合作 Science Park」中介紹台灣科學園區之創新產業聚落並參觀台達電子之泰國公司，是一次相當難得的經驗。

報告

一、參加 SATU Summit on Industry-Academia Collaboration

SATU(Southeast Asia and Taiwan University)是由台灣的國立成功大學所發起，與東南亞的一些大學每年舉行一次高峰會議，討論一些共同關心的議題。本次 SATU 高峰會議在泰國的 Mahidol University 舉行，由成功大學的賴鳴詔校長擔任大會主席，而此次討論會議的主題著重在產業合作方面。故定名為 SATU Summit on Industry-Academia Collaboration，而研討會的重點則是以科學園區帶動產業合作為議題：“ Science Park：The best option in promoting industry –academic research collaboration”。在這個議題中邀請三位演講者。第一位是前世界科學園區(IASP)理事長 Dr. Chachanat Thebtaranonth 講有關 IASP 的產業合作計劃及泰國科學園區的重要合作案例。第二位由我演講有關台灣科學園區的創新產業聚落及產業合作的推動。第三位則是印度科研單位 Indian Institute of Science Bangalore 的副院長 Prof .N. Balakrishnan 演講印度在科技所促成產業育成的一些做法。與會的人均認為以科學園區的廠商作為產業合作的基礎較易促成，並且討論產業合作應由政府主導或學校主導。一般的看法是每個國家狀況不同，如以開發中或未開發的國家一定是由政府積極主導，至於已開發的國家(如：美、日、歐等)大學及廠商均有較大的主導性，政府只需從旁作部份協助就可。會中討論的一些想法對台灣未來推動科學園區的產業合作應有助益。

本次 SATU 高峰會議有另一項值得一提的就是” Business plan Competition ”，由各國大學的學生組團參加，不論大學生或研究所學生均可。可幾人一組提出一個創業的構想及 Business plan，在會議中公開講解，由評審委員評分。總共有 20 隊參加。包含汶萊有 1 隊；印尼 3 隊；馬來西亞 2 隊；菲律賓 3 隊；新加坡 2 隊；泰國 2 隊；台灣 4 隊及越南 3 隊。其中台灣的

4 隊分別為中山大學、成功大學、台灣師範大學及明志科技大學等。比賽結果由台灣的中山大學獲得第一名，菲律賓的馬尼拉大學獲得第二名，而第三名由泰國的 Mahidol 大學及新加坡大學兩校獲得。

這種由學生提供創意的創業計劃比賽，帶動學生以致用的概念具有相當的意義，值得參考。

二、參觀 Bang poo 工業區之台達電子公司

台達電子算是台灣企業較早到泰國設廠並在泰國算是較大的台商企業，這次參觀曼谷地區的台達電子約有近一萬員工，主要是生產 Switching power supply 相關的產品為主。有多項產品都是世界第一的產品。此次參訪由台達泰國公司的謝總經理接待。先以簡報介紹台達公司在泰國發展的現況。基本上，台達公司在東南亞是以泰國為核心向東南亞各國擴散。因此，台達在泰國亦設有研發中心，與台灣保持密切的互動。此研發中心的人員亦經常派到台灣台達公司本部受訓。整體的運作上算是相當順暢。所以在簡報中亦有部分時間由其研發部主管介紹台達在泰國的研發狀況。簡報後則安排廠房參觀。包括生產綫、檢測部門及研發部門等，均有人做詳細解說，表現出高度的誠意。對前往參訪的人算是很難得的一次經驗。

心得與建議

科學園區的未來發展，人才是非常關鍵因素，如何利用產學合作為廠商提供更多人才是國科會及科學園區管理局的責任，目前科學園區積極推動以產業主導的產學合作計畫應該是可更擴大並積極推動，對台灣的科學園區將有極大幫助，台灣科學園區的成果已深獲國際肯定，我們應更積極主動出擊，以科學園區推動國際合作，也可作為政府推動科技外交的資產。

Science Park Development in Taiwan

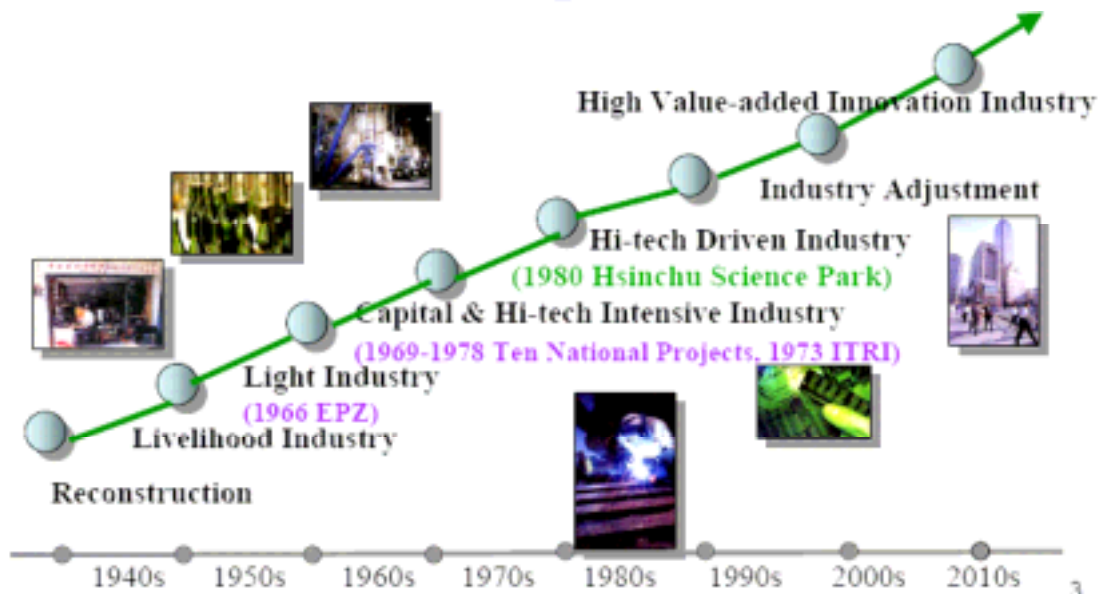
Dr. Der-Ray Huang
Director General, Science Park Administration
Hsinchu Science Park, Taiwan
November 2007



Content

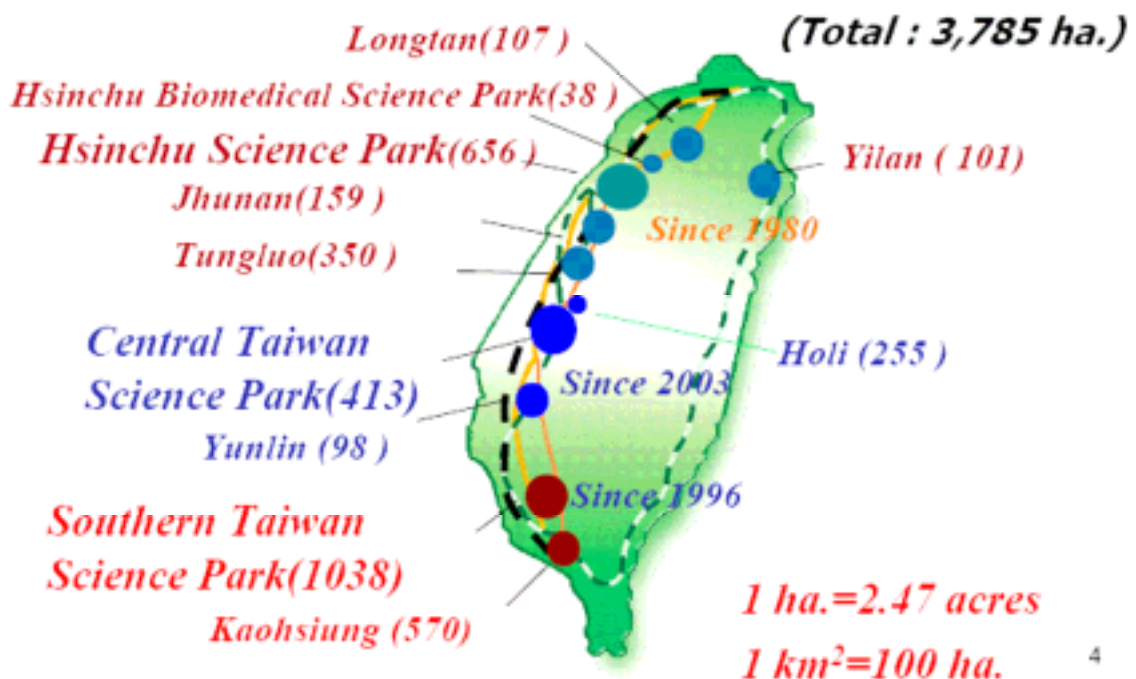
- Industry Development in Taiwan
- Development of Science Parks
- Successful Model
- Future Prospects

Milestone of Taiwan's Industry Development



Development of Science Parks

Science Parks in Taiwan

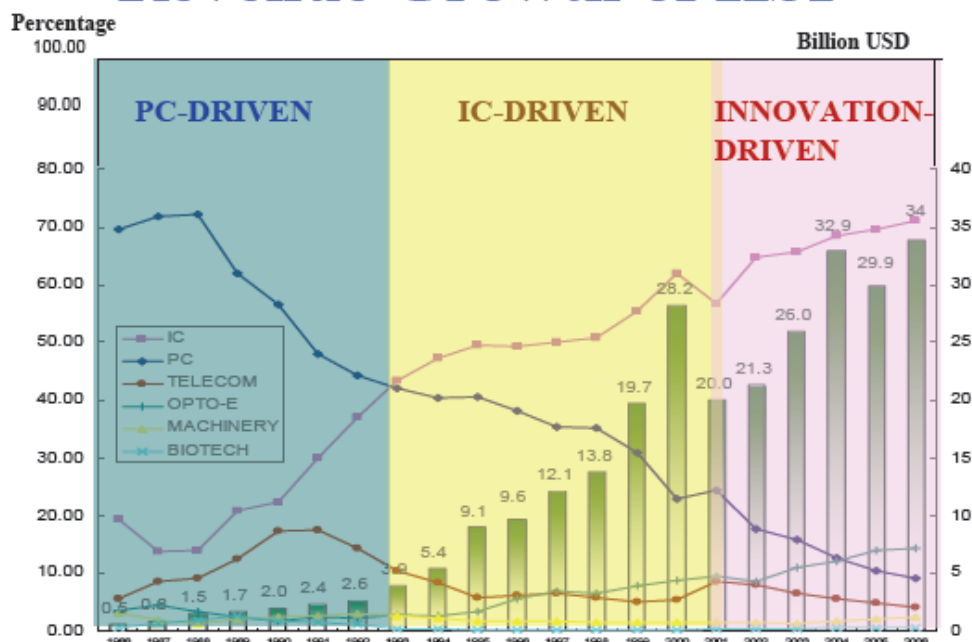


Mission of Science Park Development

- *To attract hi-tech companies and professionals to the park*
- *To encourage R&D and innovation of hi-tech industries*
- *To create a global hi-tech industry cluster and an innovation hub*

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Revenue Growth of HSP



**Sharing 10% of Taiwan's manufacturing industry & 25% of Taiwan's IT industry (2006)*

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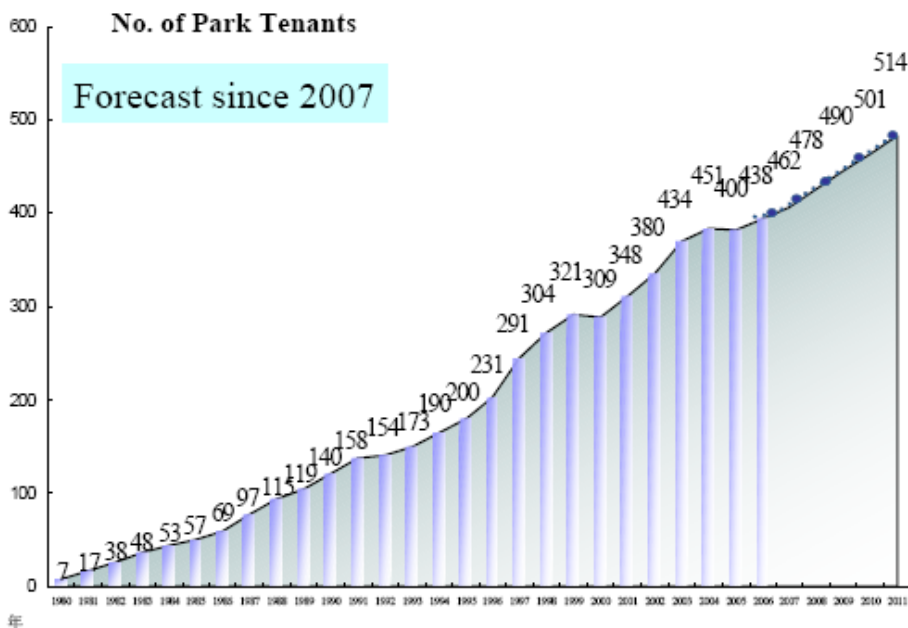
Hsinchu Science Park (2007/9)

- **Tenants: 438** **Total area: 1,411 ha.**
- **Employee: 123,558**
- **Revenue: US\$34 b.(2006/12)**
- **Industries: Integrated Circuits, IT related,
Computer, Precision machinery,
Telecommunication and Biotechnology**



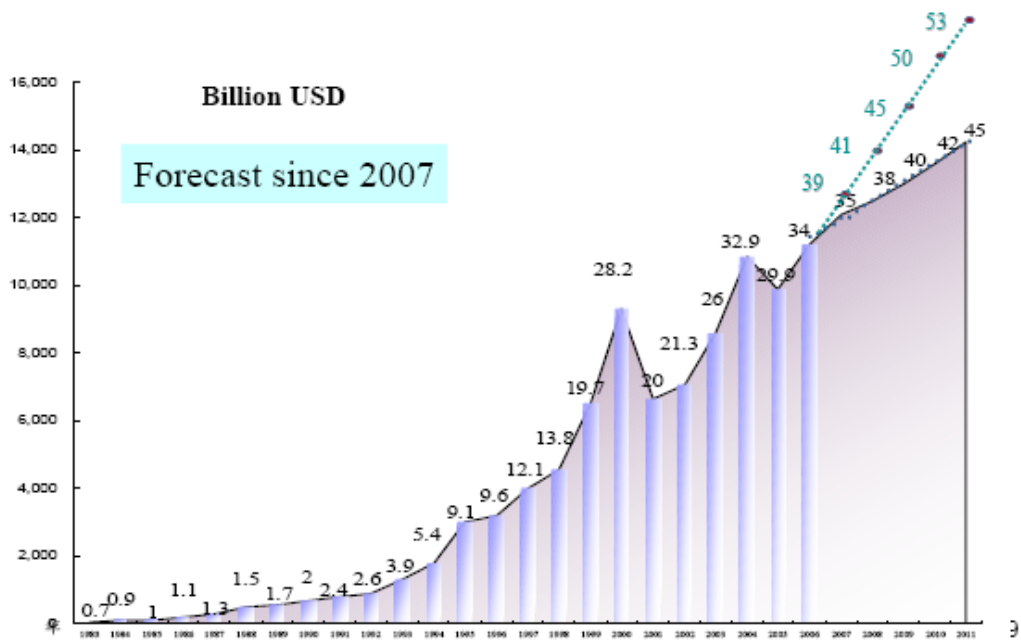
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Tenants Growth of HSP

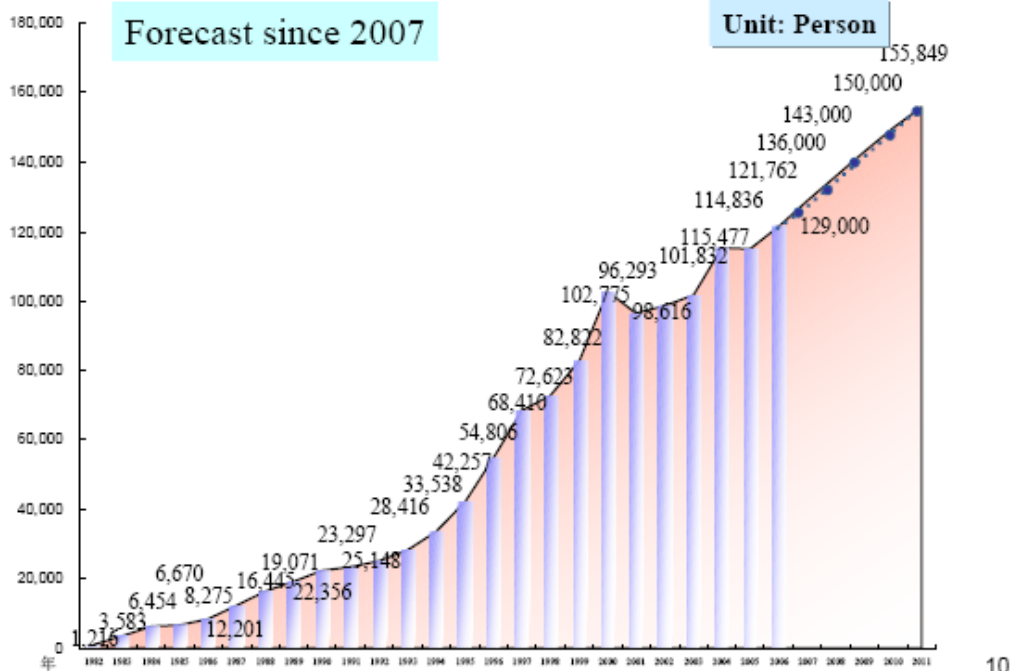


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Revenue Growth of HSP

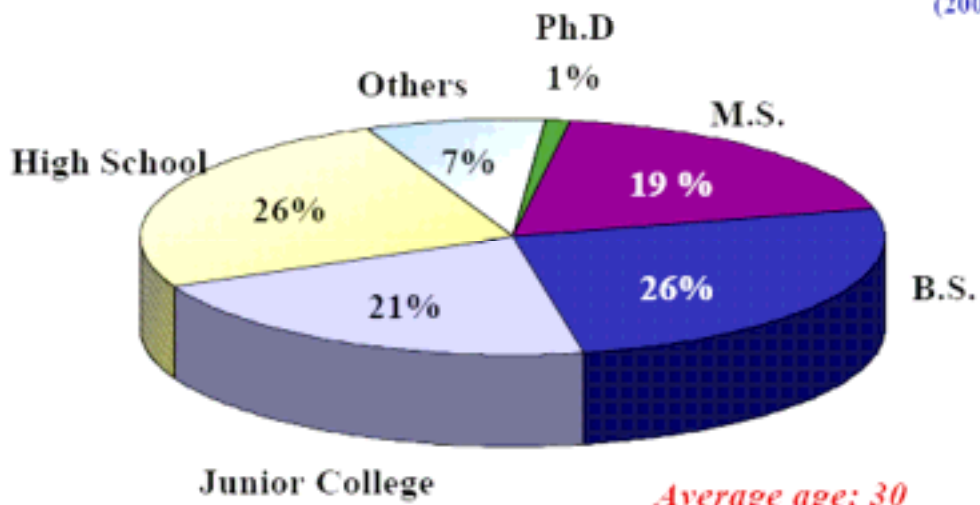


Employment Population of HSP



Human Resources at HSP

(2006.12)



Average age: 30

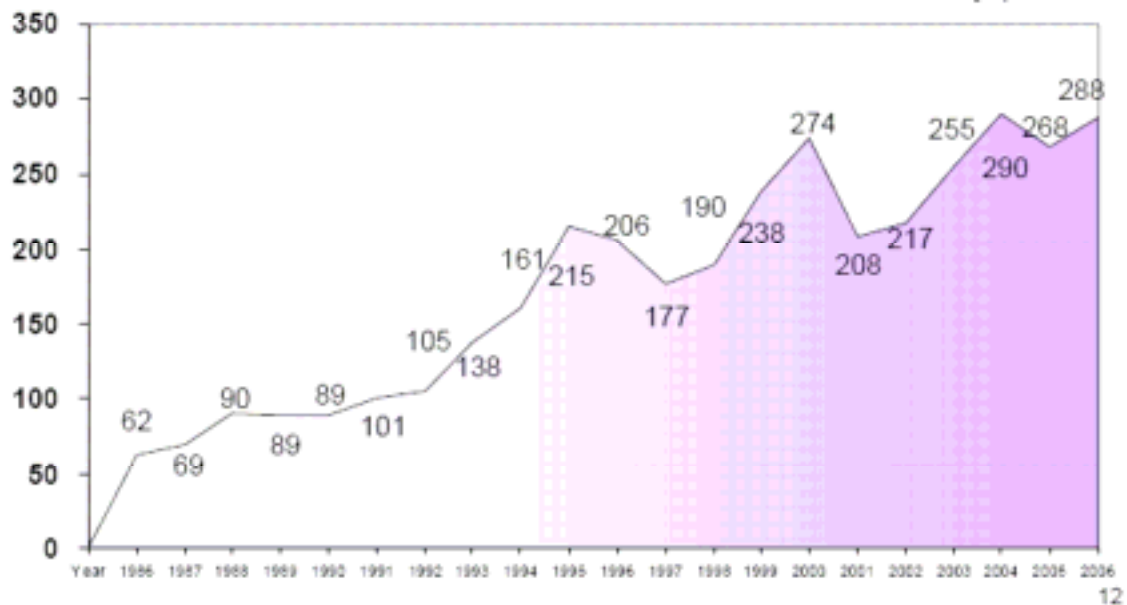
Male : 54%

Female : 46%

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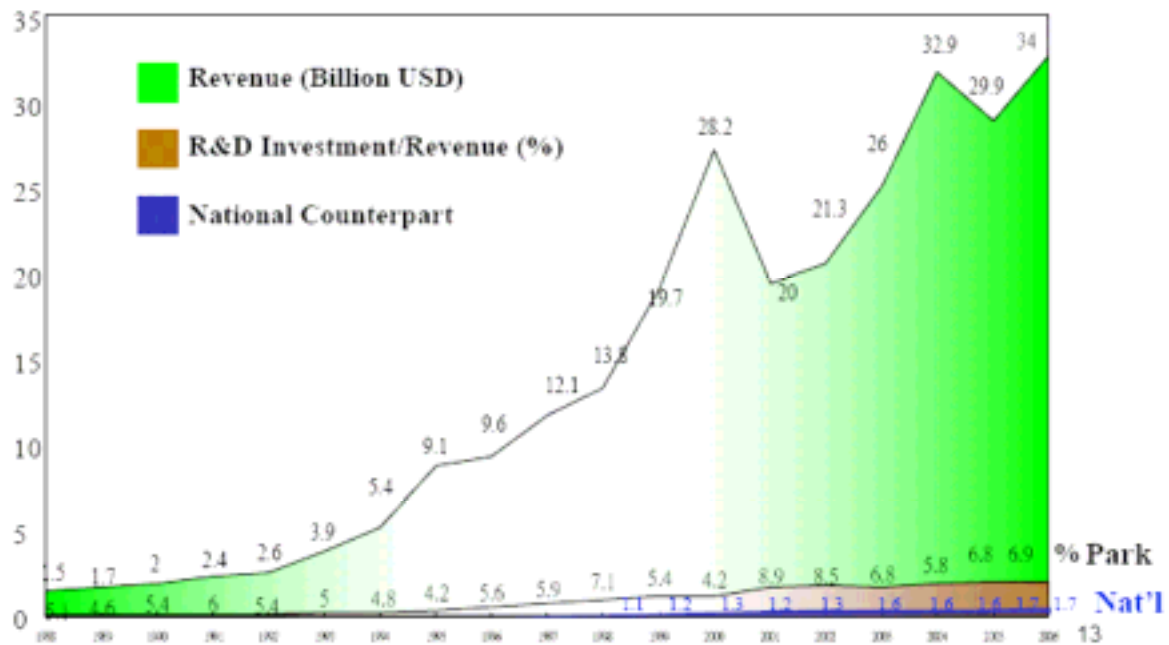
Park Labor Productivity of HSP

Thousand USD/Employee/Year

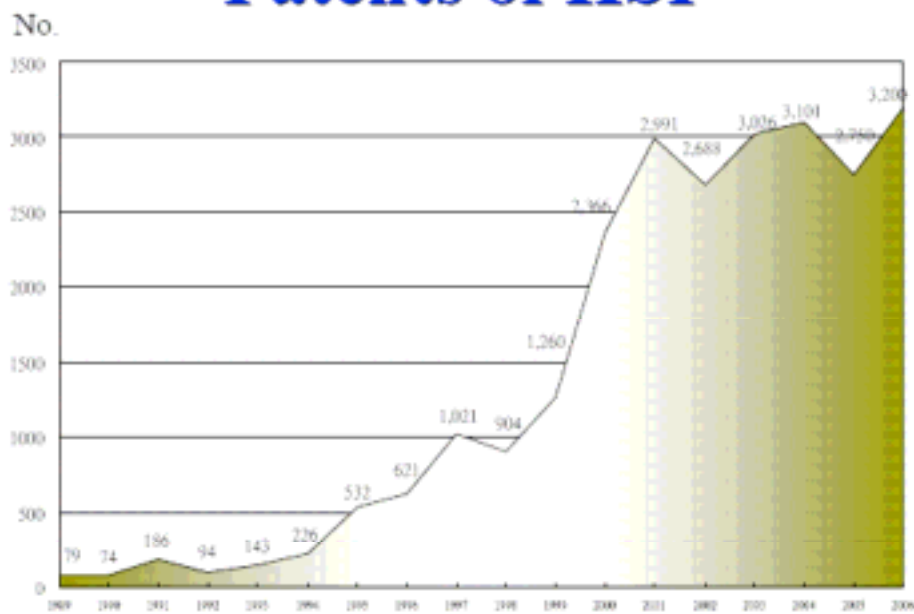


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R&D Investment of HSP (1988-2006)



Patents of HSP

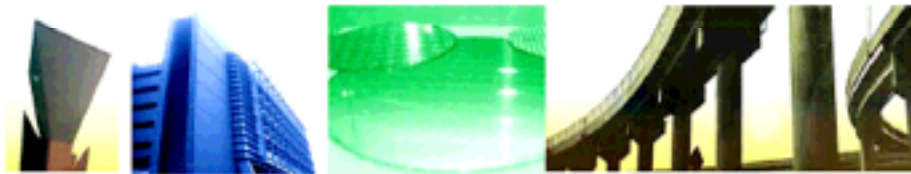


*No. of patents approved at the HSP is about 11% of Taiwan's patents
 *Taiwan's patents approved in the US ranked No. 4 worldwide in 2005

Southern Taiwan Science Park (STSP)

(2007/9)

- **Tenants: 97** **Total area: 1,608 ha.**
- **Employee: 51, 447**
- **Revenue: US\$13.4 b.(2006/12)**
- **Industries: TFT-LCD, Integrated Circuits, IT related and Biotechnology**



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Revenue Growth of STSP



Central Taiwan Science Park (CTSP)

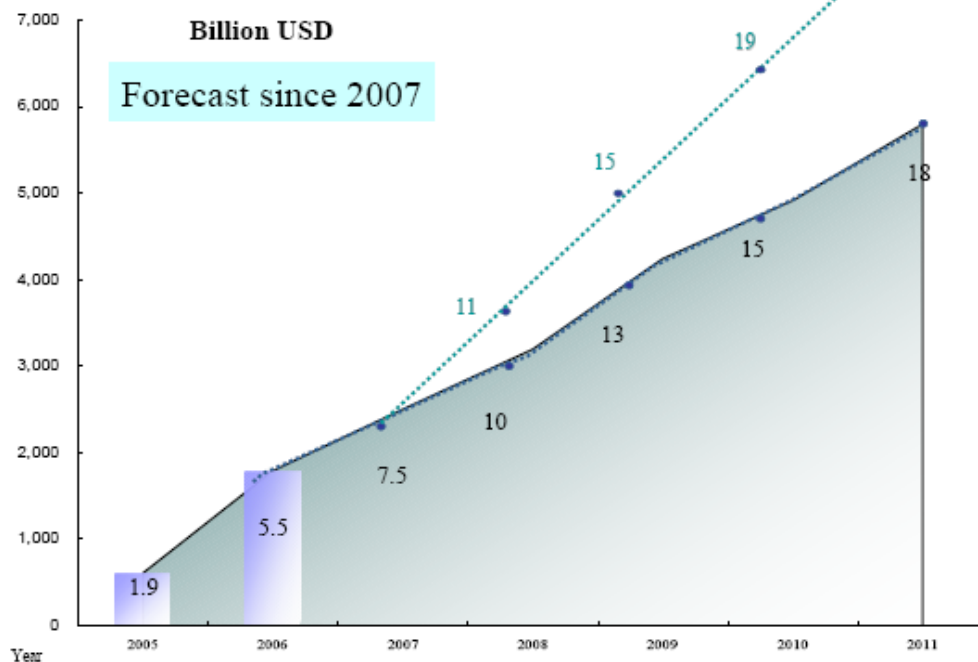
(2007/9)

- **Tenants: 34** **Total area: 766 ha.**
- **Employee: 16,264**
- **Revenue: US\$5.3 b.(2006/12)**
- **Industries: Integrated Circuits, TFT-LCD, IT related**



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Revenue Growth of CTSP



Revenue Growth of Taiwan's Science Parks



Effect of Science Parks to Taiwan's Economy

(2006)

- 16% of manufacturing industry
- 40% of IT industry
- 14% of Foreign Trade
- 15% of Patent
- 0.1% of total land area of Taiwan

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Key Success Factors



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Incentives & Services

- One-Stop Services
- Superior Academia-industry Links
- 5 Years Corporate Tax Break
- No Import Duty/Commodity Tax
- R/D Encouragement Grants
- On-Job Training

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Facilities

- **Standard Factories**
- **Banks**
- **Housing Units**
- **Clinic**
- **Bilingual School**
- **Gas Stations**
- **Post Offices**
- **Recreation-Facilities**
- **Telecommunications**

Close Links between Academic & R&D Organizations



Strategies for Innovation Science Park

First-Class of Innovation Industry Cluster

- *Establishment of IP innovation center*
- *Bring-in of high added-value industry (e.g. SoC)*
- *Establishment of versatile technology exchange platform*
- *Development of knowledge-based science parks*
- *Strengthening global links & collaboration*

A Park with Innovative Culture & Recreation

- *Enhancement of Park life and humanity quality*
- *Cultivating Park's recreational facilities*
- *Rendering a win-win portfolio with surrounding communities*

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Establishment of IP Innovation Center

- *Establishment of IP innovation center, which provides IP databases and IP cases inquiry services.*
- *Generating IP value via global patent licensing and elevating effect of knowledge-based industries.*
- *Forming cluster of IP industry & IP applications via bring-in of law houses, accounting offices, industry analysis banks, venture capitalists, etc.*



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Development of Si-Soft R&D Capacities and SoC Industries



Si-Soft R&D Center

Area: 46,690 m²

Services provides:

- EDA platform
 - IP Mall
 - SoC testing
- Expecting to bring-in 50 tenants in two years
- Creating the highest revenue in SoC industry worldwide

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Establishment of Versatile Technology Exchange Platform

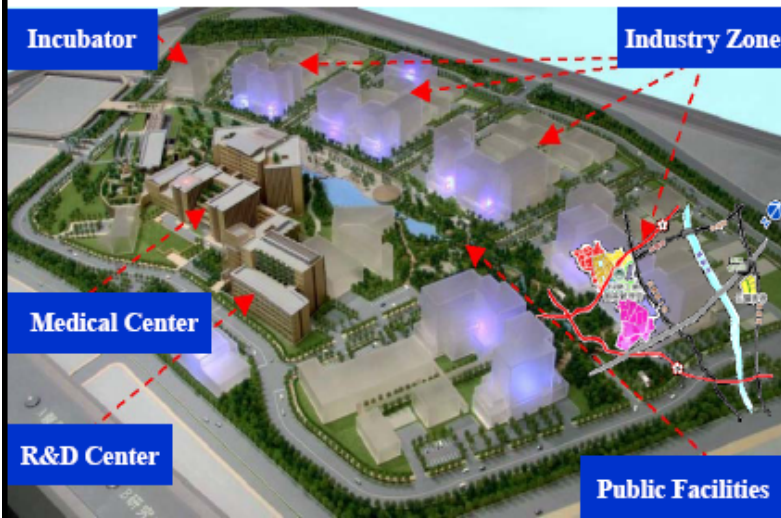
- *Attracting foreign experts and establishment of guesthouses & offices*
- *Summoning technology forums and mediate technologies*
- *Bringing in foreign advanced technologies to elevate domestic industries*
- *Encouraging and subsidizing academia-industry collaboration projects*



Park Experts' Guesthouse

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Hsinchu Biomedical Science Park



Goal

- **First-class of bio-medical R&D & education cluster worldwide**
- **Piloting Taiwan's bio-medical industry development**
- **Expected to operate in 2008**

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A Park with Innovative Culture & Recreation

- *Adding art elements and humanity concerns*
- *Cultivating the Park as a recreational venue for the public*
- *Social care and feedbacks*



Innovative Cultural Festival

Art Series & Recreational Programs

Humanity Concern Program

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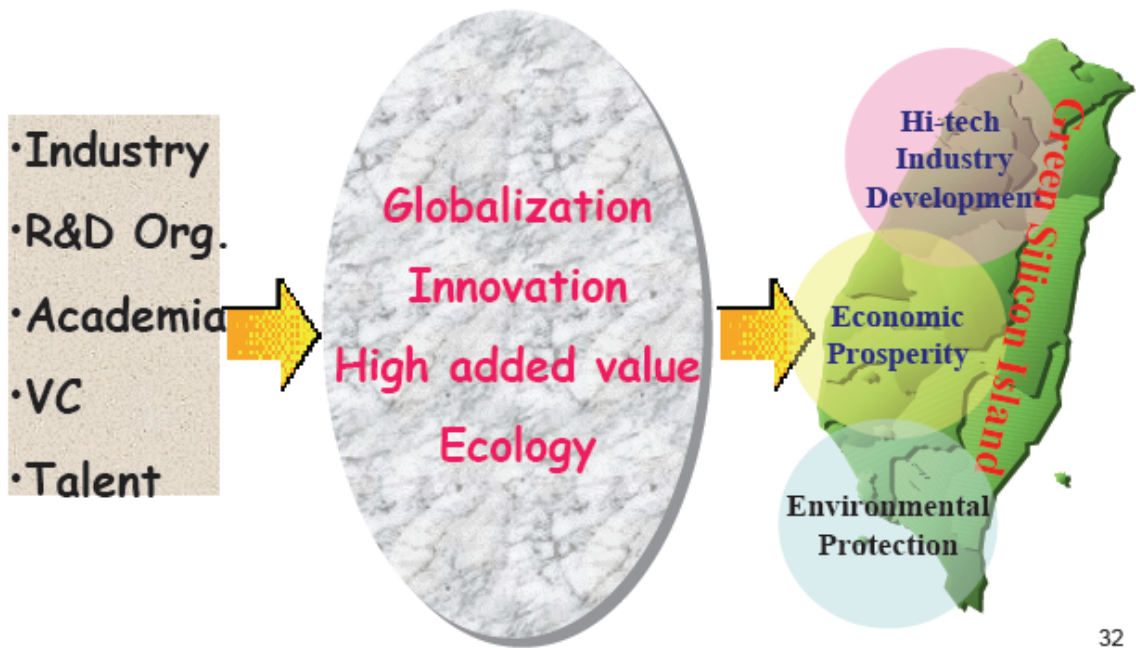
Global Partnership

Total: 23 Sister Parks in 12 Countries

FRANCE	•Sophia Antipolis	1		
CANADA	•British Columbia	1		
	•Quebec Metro Science Park	2		
USA	•Tri-Cities	2		
	•San Jose	7		
	•California St. Uni.			
	•EDAB			
	•Sandia, Arrowhead, & NMU			
	•Baton Rouge City			
BRAZIL	•Uni. of RGande Do Norte	2		
	•The Pontificia Universidade Catolica Do Rio Grande Do Sul			
SWEDEN	•Mjardevi, AB	1		
KOREA	•Ansan Technopark	1		
SPAIN	•Andalucia Science Park	1		
RUSSIA	•Moscow State Uni.	1		
JAPAN	•Kitakyushu Science Park	1		
THAILAND	•Thailand Science Park	1		
TURKEY	•Haceppete Technopark	1		
UK	•Manchester Science Park	1		

*Asian Science Park Association

Future Prospects

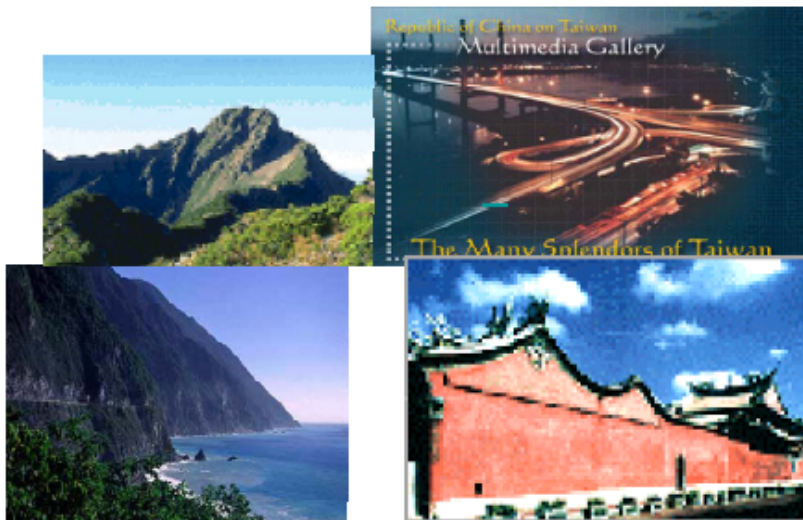


Welcome to Taiwan's Science Parks



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Also beautiful attractions



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