

# *Implementation of the University– Industry Collaboration at NTHU in Taiwan*



*National Tsing Hua University*

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# A Brief of NTHU

- First established as the Tsing Hua Academy in Beijing in 1911, renamed as National Tsing Hua University (NTHU) in 1928 and reinstalled on its current campus in Hsinchu of Taiwan in 1956.
- NTHU has been one of the premier universities in Taiwan and is widely recognized as the best incubator for future leaders in industries as well as academics.
  - Education - 7 Colleges, 17 Departments and 20 Graduate Institutes
  - Research & Development (1st R&D Office in Taiwan since 1981) – 18 topical research centers
  - University-Industry Collaboration – 1 university-industry collaboration office, including Incubation Center and Division of Intellectual Property & Tech. Licensing.
  - 11700 students (5600 under, 3800 master, 2300 doctoral), 600 full-time faculty members, 400 full-time researchers and 3700 research assistants



# Academic Achievements

- Ranked 297th (the 3rd in Taiwan) in 2009 Academic Ranking of World Universities (Shanghai Jiao Tong University)
- 223st (the 2nd in Taiwan) in 2009 Top Universities (Times).
- Distinguished Alumni: 3 Nobel laureates  
1 Wolf Prize winner



# University-Industry Collaboration Achievements(1)

- Awarded the “Best University-Industry Collaboration Organization” in 2009 by the Chinese Institute of Engineers in Taiwan.
- Incubation extends to bridge government R&D programs:
  - U-SPIN program (NSC): 1 (TinnoTek)
  - Foresight Taiwan-Germination (NSC): 2
    - Dr. Chiang’s “3D videos in cerebral technology”
    - Dr. Kuo’s “Nano-biotechnical micro-detection”
- 2 graduated clients (Taiwan Analog and Gemtek) from incubation center
  - award “Bellwether Company” in 2009 by the MOEA as anchor start-ups with high potential to lead in industry (only 4 companies in Taiwan).



## University-Industry Collaboration Achievements(2)

- From 2007 to 2009, NTHU was number 1 of the most US patents issued
  - accounted for 15% and 13% of all US patents granted to Taiwanese universities
  - of which 6 patents were licensed to related technological industries.
- Incubation Center
  - 8 IPO, representing 18% of the total university IPO ventures (45) in Taiwan
  - stands out as number 1 in Taiwan for achieving IPO records in past 10 years.





# Strategies to efficiently implement the university-industry cooperation

- **B**ridge: develop novel mechanism to promote entrepreneurship among professors, students, alumni and local entrepreneurs
- **R**eorganization: one-service window for efficient service
- **I**ndustrialization: NTHU-industry joint research centers for effective industrialization of leading technology
- **D**evelopment: leverage NTHU outstanding research capability and strength
- **G**overnance: Recruit domain experts to build professional management team
- **E**nvironment: Revise university regulations and create effective incentives to promote university-industry collaboration

# Bridge - develop novel mechanism to promote entrepreneurship among professors, students, alumni and local entrepreneurs

- Participates in the *Taiwan Technology Marketplace* conducted by the Industrial Technology Research Institute of Taiwan (ITRI)
- Bridge the gap between researchers and sponsors, and to help government agencies manage important project offices
- Organize various workshops and seminars to foster University-Industry collaborations
- Developed a collaboration partnership with IBM on the basis of NSC funding



# Reorganization(1) – level upgrade

Research & Development Office

Research & Development Office



**April 15<sup>th</sup>, 2009**  
**Approved by**  
**University**  
**Affair Meeting**

Division of corporative education

Division of technical services

Division of Government & Industry Collaboration

Division of Intellectual Property and Technology Licensing

Center for Innovative Incubation

Science Research Center

Center for Innovative Incubation

Division of Intellectual Property and Technology Licensing

**3<sup>rd</sup> level**

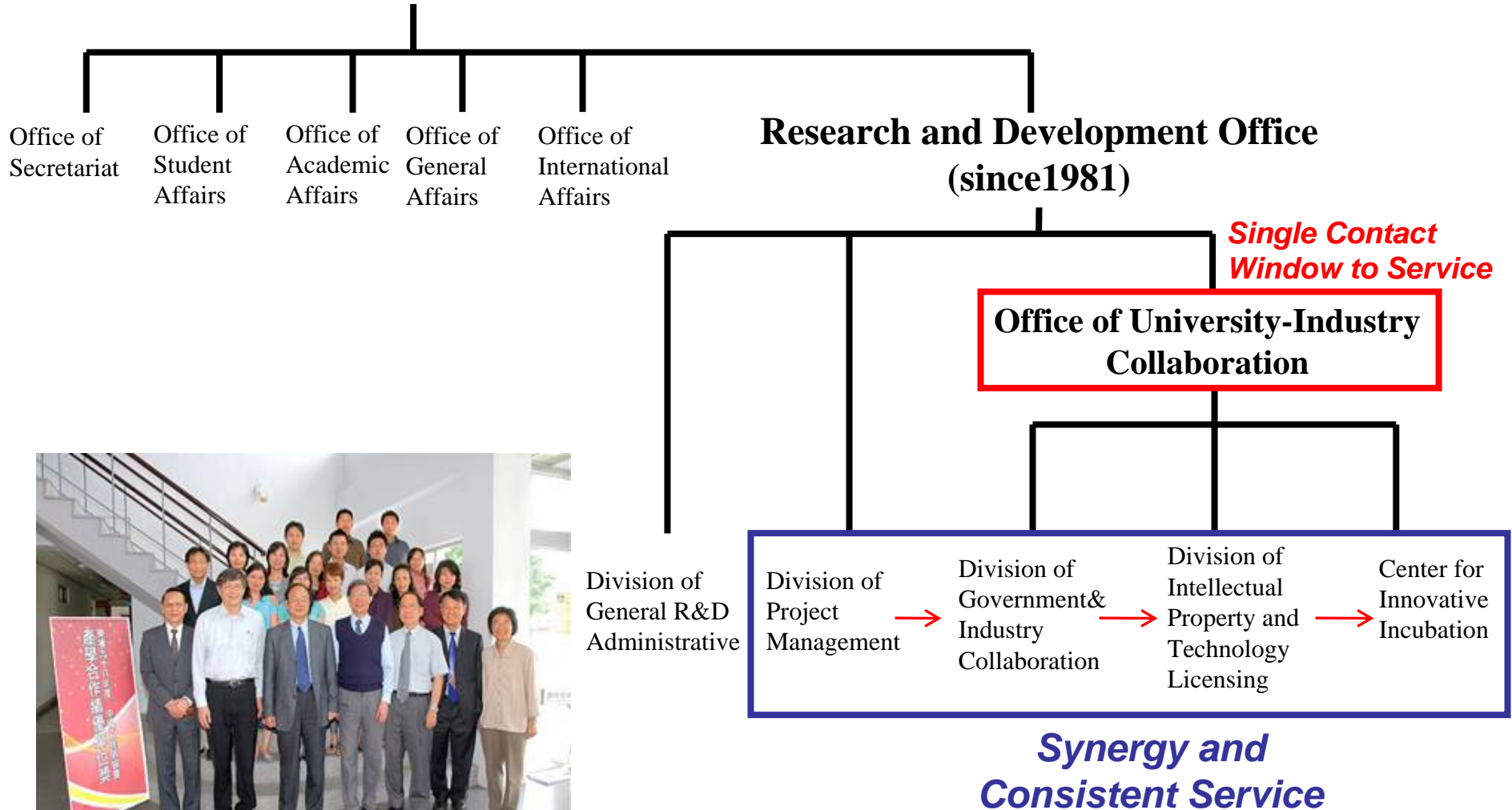
**2<sup>nd</sup> level**





# Reorganization(2) – one-service window for efficient service

**President**



# Industrialization - NTHU-industry joint research centers for effective industrialization of leading technology

## ■ Joint Labs

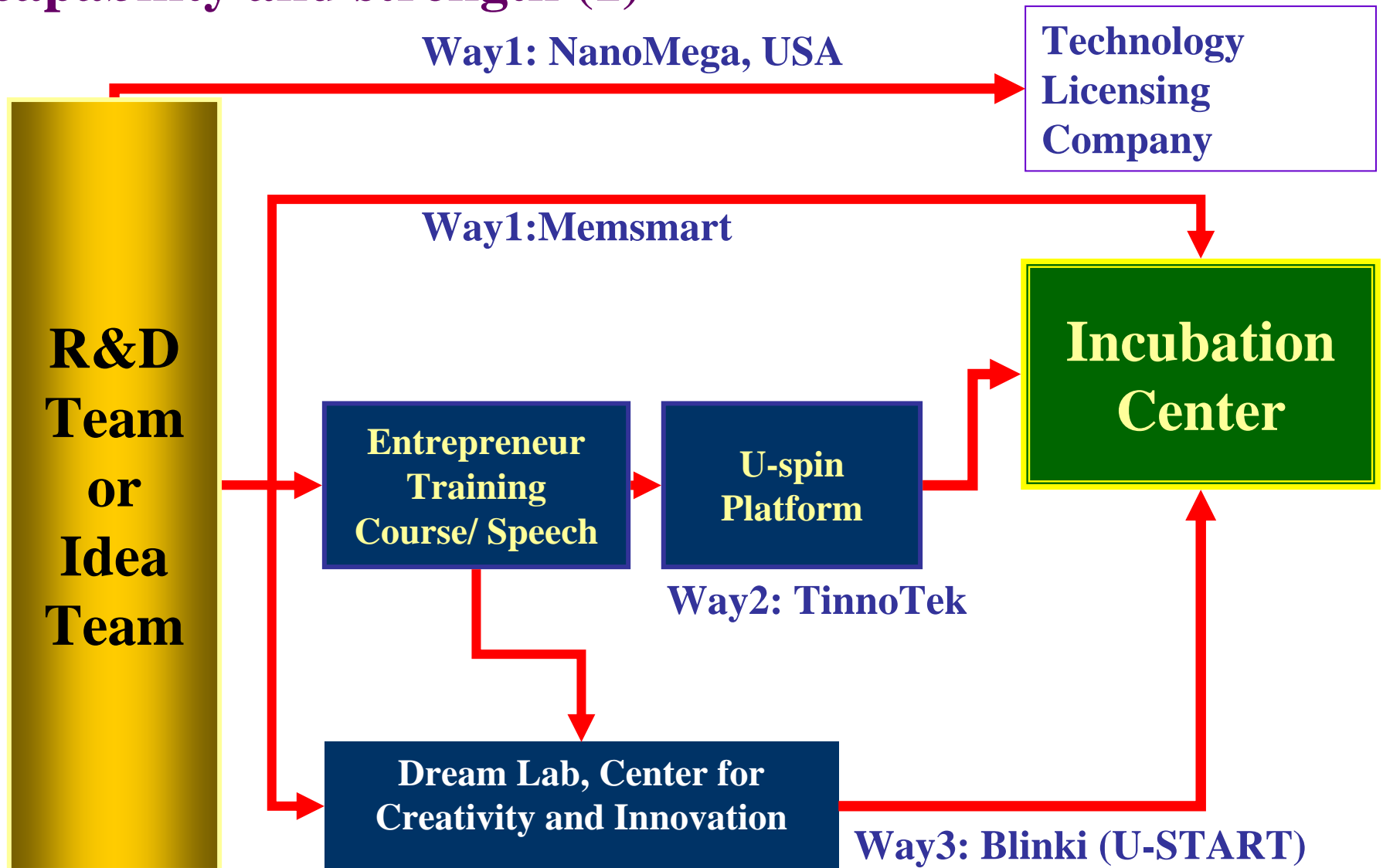
- MEDIATEK's embedded system
- DELTA's industrial academic cooperation R&D plan
- NOVATEK's System on a Chip

## ■ Future

- Establish a joint lab nearby TSMC Building at NTHU (south campus)
- Invite world's top researchers to participate in the study on industrial academic cooperation research and advanced technology development



# Development: leverage NTHU outstanding research capability and strength (1)



# Development: leverage NTHU outstanding research capability and strength (2)

## ■ U-SPIN: **TinnoTek Inc.**

- U-Spin: The technology of NTHU is commercialized and derived a company.
- Technology Transfer: “Method and computer program product for register transfer level power estimation in chip design” (R.O.C. Patent Number: I258702)
- Oriented Date:2008
- Business: EDA (Electronic Design Automation)
- Incubation Contents : Human Resource Training, Marketing, Business Management Consultant, Finance Support & Government Subsidy
- Industry : Software
- Product :
  - PowerMixer : Mixed-Level Power Estimation
  - PowerCat : Power Characterization for Library



# Governance: Recruit domain experts to build professional management team

- Invite Deputy Dean R&D Office to serve as the CEO of University-Industry Collaboration Office
- Division of Intellectual property and technology licensing
  - Recruited PhD manager with excellent experiences
  - Recruited legal executive to help advance activities
- Division of Innovation Incubator Center
  - Recruited experienced MBA manager from enterprise



# **Environment: Revise university regulations and create effective incentives to promote university-industry collaboration**

## ■ Regulations in 2009

- Details for Recruitment of Industrial Academic Cooperation Personnel
- Details for Promotion of Industrial Academic Cooperation Personnel

## ■ Outstanding Industrial Academic Cooperation Award since 2006

- 10 professors granted the award in 4 years (2006~2009)

## ■ Center for Creativity and Innovation since 2007

- Organize the campus creative competition and incentive plans
- Accreditation and guidance to awarded students

# Future Plan

- Proposed new 10,000 square-meter University-Industry Collaboration Building to be completed by 2011.





**Thank you  
&  
Welcome to Tsing Hua**

