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Pursuing High-Tech Academia Leadership Excellence:
How to Proceed?

Initiated by:

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University Strategy Advisor & Honorary Professor, NCTU

Presented by:

Chin-Teng Lin, Professor/Associate Dean, NCTU

Participating Leaders (page1)

- **Supported by**
  - Including, but not limited to (alphabetical order according to first name)
  - Brian (Bin-Da) Liu, Prof. at NCKU (Chair of CASS Taipei Chapter)
  - Cheng-Wen Wu, Prof./Dean at NTHU (Region-10 active member)
  - Chin-Teng Lin, Prof./Associate Dean at NCTU (AE of T-CAS 1 &2)
  - Eby Friedman, Prof./Dir. at Univ. of Rochester (2001-02 EIC of T-VLSI)
  - Jhing-Fa Wang, Prof./Dean at NCKU (Chair, IEEE Tainan Section)
  - Liang-Gee Chen, Prof./Dir. at NTU (Chair of Multimedia TC)
  - Peter Wu, Prof./Dean at NCTU (VP Conferences)
  - Thanos Stouraitis, Prof. at Univ. of Patras (General Chair, 2006 ISCAS)
  - Wai-Chi Fang, Dr./Prof. at NASA/JPL of Caltech (Chair, Multimedia TC)

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Participating Leaders (page2)

- **Included (on or after 04/10/2004)**
  - Chong-Yung Chi, Prof./Chair of Institute of Communications Eng., NTHU (AE of IEEE T-SP & Editor of EURASIP JASP)
  - Chua-Chin Wang, Prof. at NSYSU (BoG of Taiwan IC Design Society)
  - Jar-Ferr Yang, Prof./Chair, NCKU/Inst. of Computer & Comm. Eng.
  - Jerry (Shyh-Jye) Jou, Prof. at NCU (Secretary of Taiwan IC Design Society & Chair of SoC Consortium, VLSI Educational Program, MOE)
  - Jui-Lin Lai, Prof. at NUU (R10 active member)
  - Oscal Chen, Prof./Dir. At CCU (AE of C&D Magazine)
  - Rong-Jian Chen, Prof. at NUU (R10 active member)
  - Wael Badawy, Assist. Prof. at Univ. of Calgary (R-7 active member)

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Professional Publication Channels

- Proceedings of **conferences**/symposia/workshops (especially Annual **flagship** conference)
- Archival journals
  - **Invited** papers, **Regular** papers, Short/Brief papers
- Society magazines
  - Feature articles, Post-conference reports
- Book Chapters
- Books
  - Edited, or Authored
- Patents

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Conference Publications

- Regular Sessions
  - ➢ Most common forum
- **Invited** Sessions (higher-level goal)
  - ➢ Paper **Author**
  - ➢ Session **Organizer** and/or **Chair**

- Tutorial, Short-courses
- Panels
- Keynote, Plenary Talks

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People Related to (Journal) Publication

- Author(s) himself/herself/themselves
- Author's Peers (domestic or international)
- 3-5 Reviewers
- Associate Editor
  - ➢ or Area Editor
- Editor-in-Chief
  - ➢ or Guest Editor for Special Issue
- Many Readers

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Push or Pull ?

- Ask **"Who will benefit most ?"**
  - ➤ The Author(?), peers, the Reviewers(?), Asso. Editor, or EIC?
- Pioneering/Breakthrough paper
  - ➤ Opening up new field or technical area
  - ➤ Many researchers will benefit from it.
- **Opposite** ways of mentioning **prior arts**
  - ➤ Multi-party activities, Not **zero-sum** game
  - ➤ **Push:** Enumerate the limitations: Ask for *blocking* force
  - ➤ **Pull:** or Elaborate the contributions: Invite *assistance* force

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To Establish Core Cooperative Team

- Uprising Team
  - ➤ With a mixture of domestic and international peers
  - ➤ From a mixture of common and/or complementary areas
  - ➤ With a mixture of "*age*"/recognition groups
- Activities
  - ➤ Maintain regular communication: via email, telephone, face-to-face meetings, at conferences, etc
  - ➤ Share pre-publication technical reports
  - ➤ Conduct research cooperation, Share publication opportunities

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To Enlarge Beneficiary Team

- Special Issue (journals), Invited Session (conferences)
  - ➢ Provide **visible** and extra opportunities to peers

- **New Initiatives**
  - ➢ Embrace or facilitate new technical emphasis/area/field
  - ➢ During recent years: such as neural networks, multimedia, sensors, wireless, nanotechnology, biotechnology

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Positive Feedback and Team Effort

- Strengthening inside Professional Society
  - ➢ Technical Committee (TC), or Special Interest Group (SIG)
  - ➢ **Leadership** Role: Assoc Editor, EIC, Board of Governors, Administrative Committee, VP or President-Elect officers
- Promotion and Recognition
  - ➢ As *Nominee*, **Nominator, Endorser, Reference**
  - ➢ Senior Membership
  - ➢ **Fellow** Award
  - ➢ Technical (paper) Award, Service Award, etc
- Strategic alliance with leading universities
  - ➢ Need concrete substance from all faculty members, in **various aspects**

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First Homework & Possible Actions

- **Data collection and analysis**
  - ➢ Factors deciding rank standing:
    - 1. Institution aspect;   2. Teaching & Research
    - 3. People aspect: Faculty, Students, Staff
- **Self-examination**
  - ➢ Any fundamental limitations and/or deficiency
- **What to do?**
  - ➢ A. Obvious and/or *quick-response* items
  - ➢ B. *Fundamental* and/or time-consuming items
- **What to avoid?**
  - ➢ C. *Fatal* items
  - ➢ D. *Circling* items

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Useful Features

- **Scalable**
  - ➢ Allow easy zoom-in/zoom-out on selective topics
  - ➢ Facilitate event-driven approach, not uniformly
- **Hierarchical**
  - ➢ Accommodate continuous exponential growth following Moore's Law
- **Nurturing and Rewarding**
  - ➢ Suitable recognition for achievements and efforts
- **For 21st Century**
  - ➢ Encourage thinking-out-of-box endeavors

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Academic Contribution by CASS
(highlighted by Thanos Stouraitis)

- **Contribution in Program Development**
  - ➢ Explore priorities and relationships in teaching analog and digital
  - ➢ Develop, enhance and adopt courses on emerging fields, such as nanotechnology, biotechnology, etc.
- **Contribution in Program Delivery**
  - ➢ Develop initiatives to forge alliances between leading universities for advanced course delivery methods, through distance learning, etc.

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Industrial Outreach by CASS

- **Very Successful 1985 ISCAS Benchmark**
  - ➢ Widely used in academia and industry
  - ➢ For publication in journals and conference proceedings
  - ➢ Almost 20 years ago
- **Possible 2004 or 2005 CASS Benchmark ?!**
  - ➢ Involved CANDE and/or other Technical Committees
- **Other Areas**
  - ➢ Video/image processing
  - ➢ Others open for suggestion

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Four modes in participating

- **Stable ground-state mode**
  - ➢ Seldom move beyond basic states
- **Open-loop mode**
  - ➢ Unable to predict next state
- **Closed-loop with negative feedback mode**
  - ➢ Converge to desired state, e.g. AE, BoG, etc
- **Closed-loop with positive feedback mode**
  - ➢ Ramping to top spots such as EIC, ExCom, President-Elect, etc

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Proven actions

- **Meet or beat the deadline**
  - ➢ Always ready to run, and avoid dragging
- **Add GAIN effect to the actions**
  - ➢ Avoid like a passive element, e.g. resistor
  - ➢ Act like active element, e.g. transistor with gain
- **As leader, to outperform avg. peers**
  - ➢ Higher than avg. to be sensed as logic-1
  - ➢ Lower than avg. to be sensed as logic-0

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Summary

- **Old English saying**
  - ➢ "As long as there is will, there is a way."

- **Please provide**
  - ➢ comments/suggestions
  - ➢ or critical feedback

- **Let's devise the roadmap**

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