

Where is East Asia in the Knowledge Race ?

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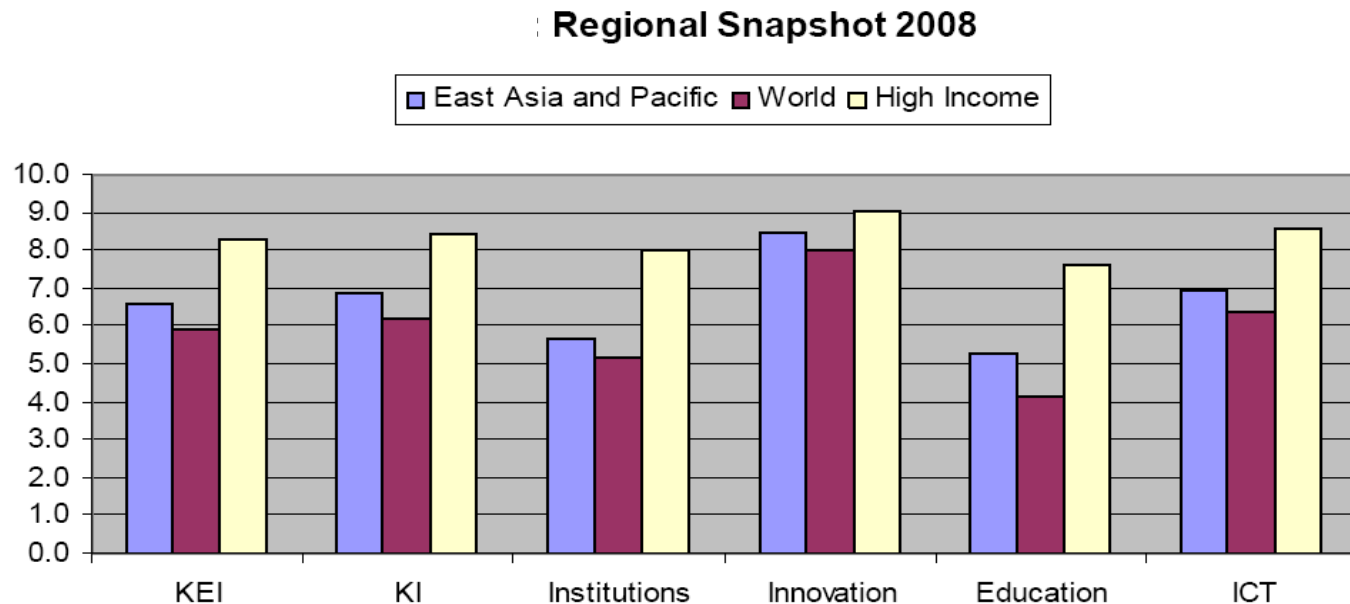
Outline of Presentation

1. A snapshot of the Knowledge Status in East Asia
2. The Role of Universities in building and developing an East Asian Knowledge Economy
3. Concluding Remarks

1. A snapshot of the Knowledge Economy in East Asia

Knowledge Economy Index

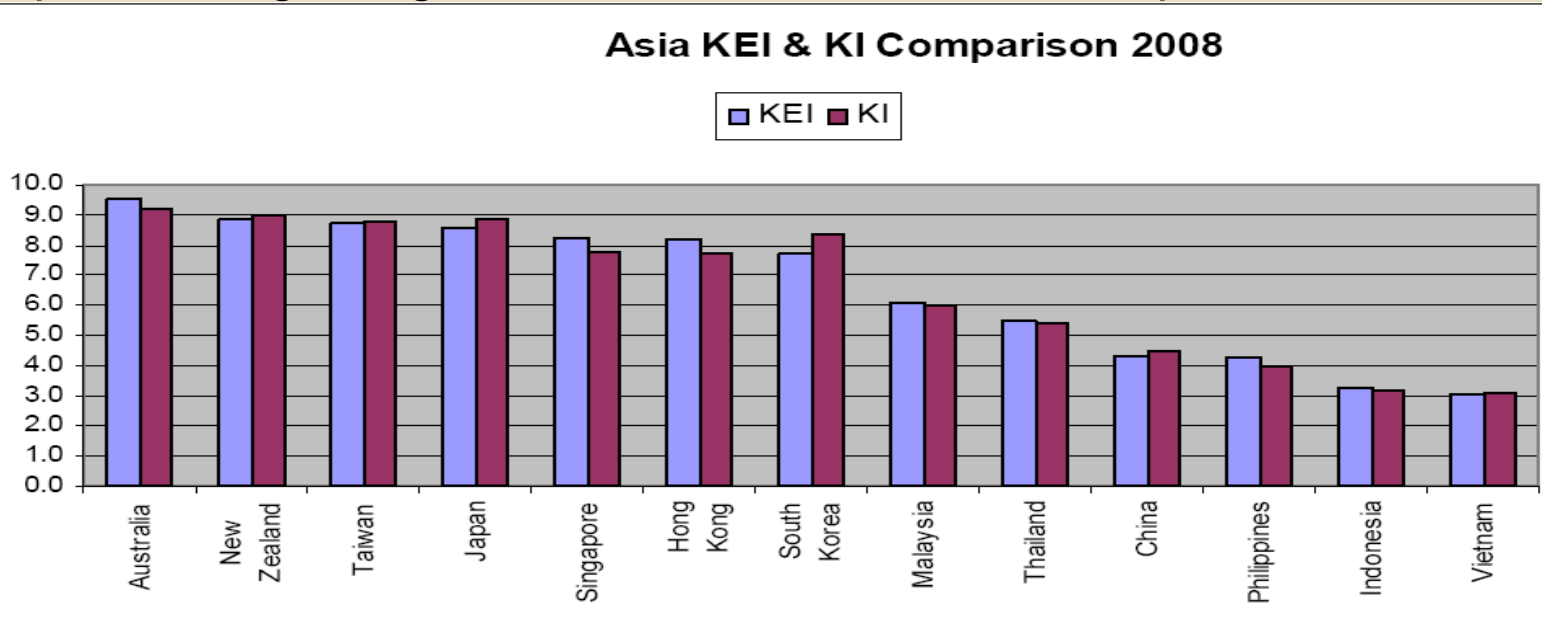
- The region is slightly above the world average and substantially behind leading OECD economies in its capacity to use its knowledge potential effectively.
- The trend for the KI is almost identical.
- The weakest aspects of the KE in East Asia in comparison with leading OECD economies is in institutional and educational performance



East Asia KEI & KI Comparison 2008

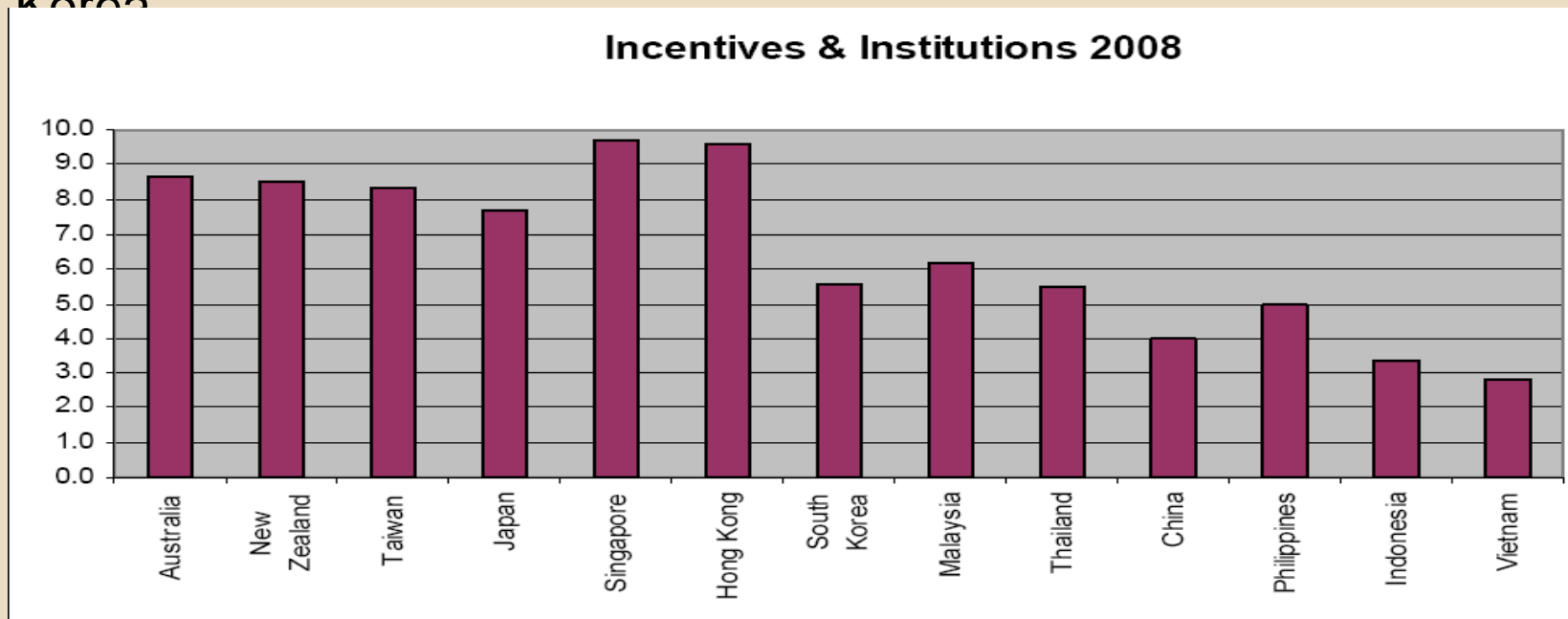
- South Korea and Japan show the largest gaps between knowledge performance and potential, clearly demonstrating institutional deficits in the effective use of knowledge.
- New Zealand, China and Vietnam also show small institutional deficits.
- In 2008 knowledge potential and performance was fairly evenly matched in Taiwan, Malaysia, Thailand and Indonesia, while Singapore, Hong Kong and Australia were able to outperform their knowledge potential.

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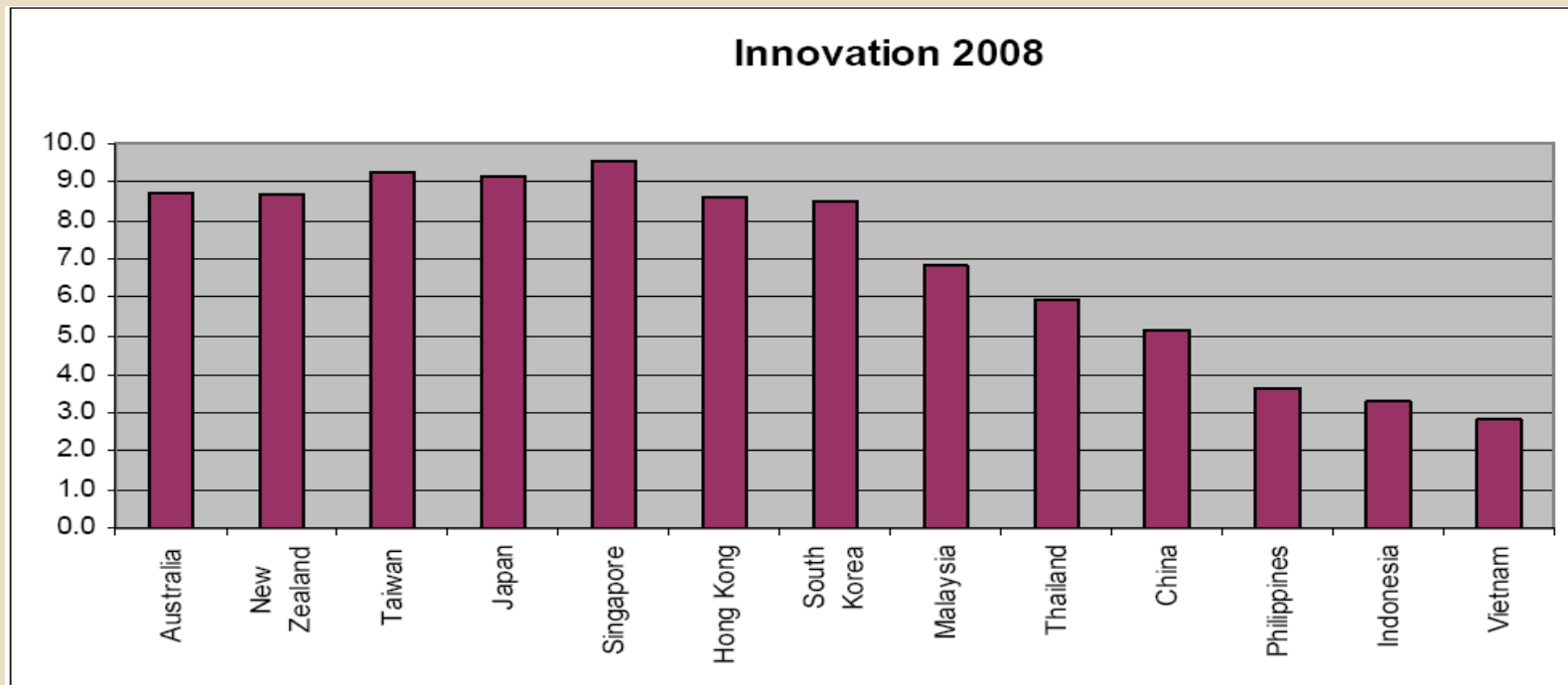


Incentives and Institutions 2008

- Singapore and Hong Kong were regional leaders by a large margin in developing the incentive and institutional structures conducive to effective KE performance.
- Australia, New Zealand and Taiwan also rated highly, while Malaysia was a leader in developing Asia, outperforming South Korea



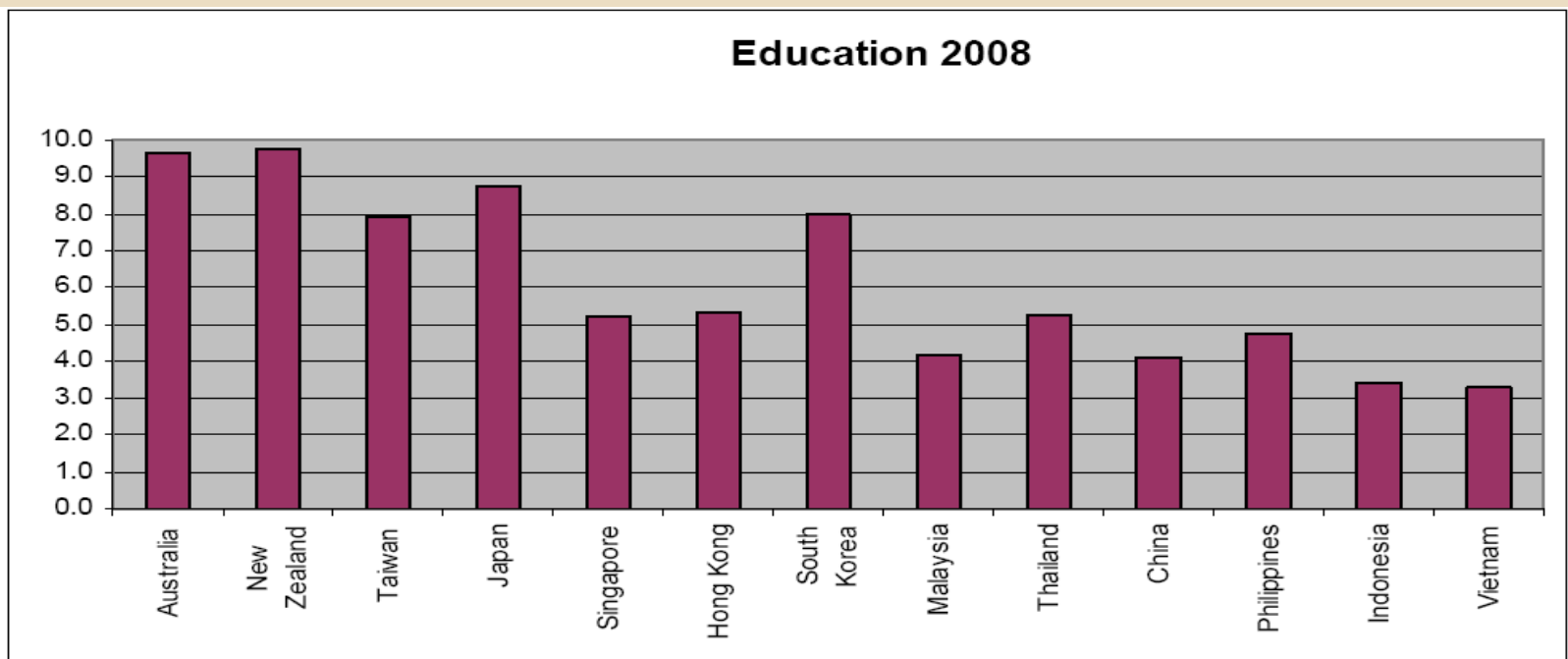
- Singapore, Taiwan and Japan were regional leaders in innovation systems, while Malaysia was best performer in developing Asia along with Thailand and China



Innovation 2008, cont....

- East Asian firms and institutions have made astonishing strides in recent years.
- Taiwan in particular, has risen to **third** highest in the world in terms of per capita uptake of USPTO patents between 1997 -2001.
- Korea ranks **eight**, with 6.6 patents per capita per year.
- Singapore is rising fast at **eleventh** on a per capita basis.
- China has few USPTO patents as yet.

- The education systems in Singapore and Hong Kong are markedly deficient compared with leaders New Zealand, Australia, Japan, Korea and Taiwan; worse than Thailand in the case of Singapore, and on a relative par with the Philippines.



- Countries that specialize in science and engineering first degrees stand the best chance of raising their per capita GDP.

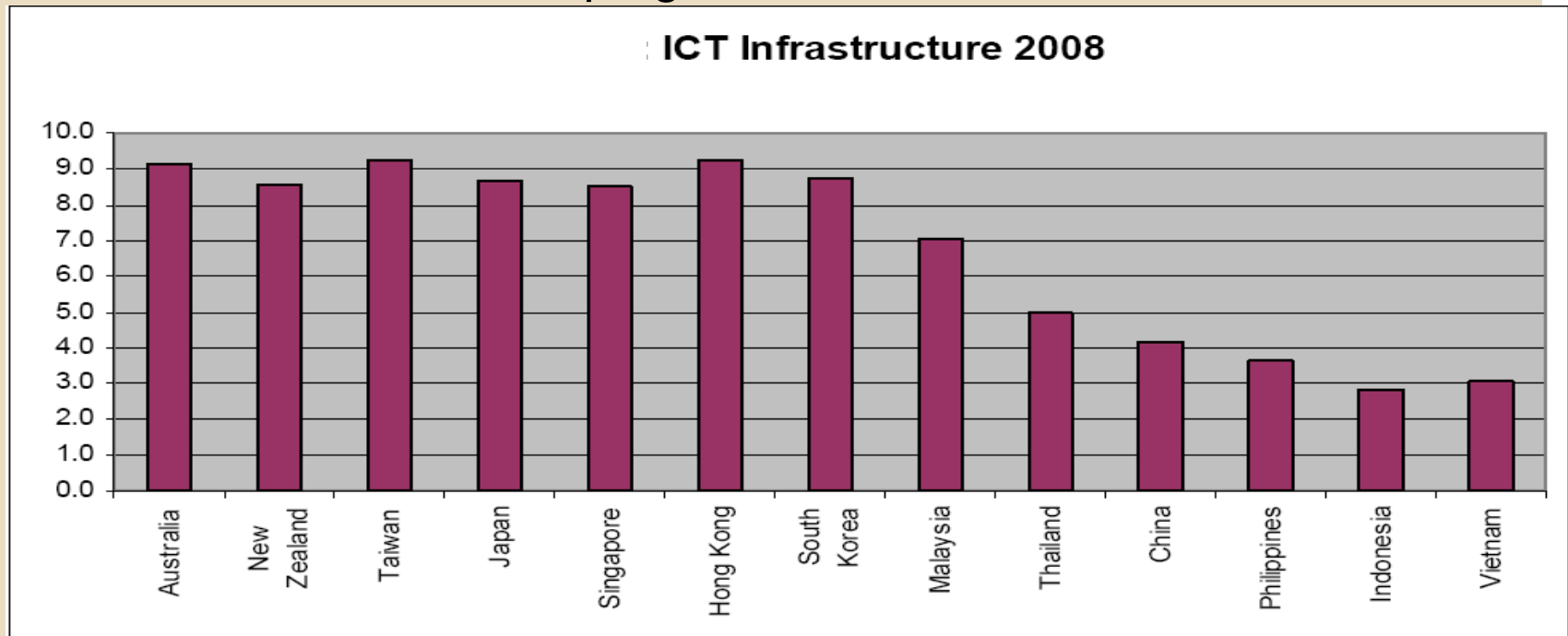
Asian Nobel Laureate: **Abdul Salam**

“It is basically mastery and utilization of science and technology that distinguishes the North and the South.”

(Most of East Asia would be included in that South.)

ICT Infrastructure 2008

- Hong Kong, Taiwan, Australia and South Korea were regional leaders in effective provision of ICT infrastructure for a KE.
- They were closely followed by Japan, New Zealand and Singapore, while Malaysia's performance was vastly superior to the remainder of developing East Asia.



Conclusions on Knowledge Status

- The higher income East Asian economies Japan, Korea, Singapore and Hong Kong are very strong on physical infrastructure and innovation systems but much weaker on institutions in the cases of Japan and Korea, and in education in the cases of Singapore and Hong Kong.
- Taiwan is clearly the standout performer in East Asia between 1995 and 2008, in improving its overall position, outperforming its knowledge potential.
- To a lesser extent, Malaysia was the standout performer in developing East Asia over the period, ranking consistently above other developing countries including China, and even outperforming Korea on the effectiveness of its institutions.
- Similar, however, to Singapore and Hong Kong, Malaysia did not score well on the education pillar, outperformed by both Thailand and the Philippines in 2008.

2. The Role of Universities in building and developing an East Asian Knowledge Economy

Knowledge-Based Economy and Global Competitiveness

- The economy is becoming more and more knowledge-based and global
- Many countries/regions have set the goal to become the world's most dynamic knowledge based economy
- Some countries intend/compete to become the most innovative and competitive one
- Innovation is the foundation of growth
- This makes R&D very crucial, specially R&D being strongly linked to business needs – need-driven R&D

Oxford slips in international university ranking as Asian rivals 'snap at heels' - *The Guardian*, 8 October 2009

- “Spending on higher education in Asia is phenomenal.
- Leading UK universities said institutions in Japan, South Korea and Hong Kong were "snapping at the heels" of western institutions arguing they needed more funding to compete on the global stage.
- Outgoing vice-chancellor of Oxford warned the university needs more than £1bn investment in the next decade to bring "unfit for purpose" facilities up to a world-class standard.

- Rethinking Knowledge
- - We need to see knowledge economy more holistically than in the past.
- - We need to better contextualize knowledge.
- - We need to better understand how and why knowledge is created.
- - We need to acknowledge that knowledge is not value-free or consequence-free.
- - We need to build not just knowledge economies, but more encompassing knowledge societies.
- Thinking Regionally
- Collaboration among diverse countries promises real benefits
- Regional knowledge agencies can maximize gains while minimizing costs
- Regional research and teaching promises further benefits

Knowledge View, cont...

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- ❑ New knowledge must be meaningfully connected
- ❑ Ability to apply knowledge to new contexts
- ❑ Universities must also work to understand better the skills employers want
- ❑ Surveys reveal the need for skills
 - communication, negotiation and persuasion, problem solving including analysis and logical thinking, leadership, management and organization, and an ability to work under pressure and meet deadlines
- ❑ Increased need for efficient, low-cost, adapted technologies
- ❑ Major changes in pattern of economic growth in many

OLD: *Universities speak to society*

- ❑ Science as the accumulation of new knowledge as a goal in itself
- ❑ Researchers with their own agenda: unrestricted freedom of research; unconditional funding
- ❑ Research: unpredictable and unmanageable?

NEW: Society talks back

- ❑ Societal perspective on science
- ❑ To produce new knowledge for practical application with high relevance, utility and economic impacts
- ❑ Research is intentional, purposive and manageable
- ❑ Responsive to requirements of market
- ❑ Funding tied to needs of sponsors

- Progress towards a knowledge-based society and economy will require that universities, as center of knowledge creation, and their partners in society and government give creativity their full attention. The complex questions of the future will not be solved “by the book”, but by creative forward looking individuals and groups who are not afraid to question established ideas and are able to cope with the insecurity and uncertainty this entails.

Some key recommendations of the EUA Report

□ Higher Education Institutions

- Engagement, outreach activities and cooperation at the local level and beyond – exposure to expertise not found within its walls and prevent isolation and self-reference.
- Virtuous knowledge creation by aiming towards co-creation of knowledge through a two-way communication process to the mutual benefit of both partners.
- Look towards the future in all activities, rather than being grounded in the past.
- “Being one step ahead” of the times by going beyond established knowledge, questioning time-honoured ideas and trying not only to solve current problems but also be proactive in identifying issues of future relevance.
- Provide Institutional structure and cultures that aim at balancing stability with flexibility – encourage risk taking – students and staff should also be prepared to contribute towards shaping future developments.

Some key recommendations of the EUA Report

□ **Governments**

- Provide higher education institutions financial and academic autonomy.
- Necessary frameworks and support to enable higher education institutions to base their activities on their values and missions.

□ **Quality Assurance Agencies**

- Invite Quality Assurance (QA) agencies to explore jointly with higher education institutions how external quality mechanisms may strengthen creativity. The ultimate objective would be the development of quality systems which foster the creativity agenda. This means placing enhancement and institution's capacity to change at the heart of the evaluation process

Major transformation of the relationship between universities and Society that also affect the universities “publicness”

- The increasing difficulty that governments experience in providing a level of funding sufficient to accommodate growing student numbers and support costly research facilities;
- The increasing use of market or quasi-market mechanisms in the external and internal governance of universities;
- The increasing expectations as regards “value for money”, relevance, as well as “excellence” in higher education and research;
- The increasing global competition for students, academics and funding;
- The rapid emergence of distance and cross-border education; and
- The rise of private non-profit and for-profit higher education

Public-Private Partnerships (PPP)

- Many formally publicly funded universities are increasingly relying on private sources of income and becoming more like private for-profit institutions than those created to serve the public good.

- Thus, many Governments, recently India is encouraging institutions in the Public-Private Partnership (PPP) mode. Benefits of PPP include:
 - **Operational Gains.** Ensuring that one delivers more and better services, or make savings to release money for investments elsewhere. Operational gains can be achieved by focusing on outputs rather than processes.
 - **Strategic Clarity.** Partnership enhance accountability by clarifying responsibilities and focusing on the key deliverables. The managerial efficiency can benefits significantly as existing financial, human and management resources can be refocused on strategic functions.

- ❑ Integration of scientific knowledge and knowledge from the Professions
- ❑ Research questions generated from practical application
- ❑ Encouragement to solve inter- and transdisciplinary problems
- ❑ Collaboration with stakeholders in the private and public sectors
- ❑ Diversity of students, staff, choice of research problems and methods

- Infosys recently inaugurated their Global Education Center-II in India (state-of-the-art facilities)– Increased capacity for 14,000 employees to be trained.

- Infosys spends Rs, 750 crore on training fresh recruits:
“if our universities are upgraded and made teaching methods more industry- and employment-oriented the IT sector need not spend that much for training”

Infosys Director T. V. Mohandas Rai

- Create long-term program to strengthen the link between the university research and the industrial R&D.
- Create multi-disciplinary, university-based Centres of Excellence in partnership with a number of companies for joint collaborative research
- Promote the introduction and implementation of new technology
- Improve the R & D and innovation capabilities of industry

Essential ingredients:

- A group of outstanding academicians from different disciplines
- Industrial involvement from the very beginning: Industries from different sectors that agree on a joint vision for knowledge development
- Government participation in funding; Working together on equal basis; Long-term commitment by all the partners; Joint academia/industry management of the centers; Strong scientific leadership; International evaluations and continuous follow up

Success Factors for a Regional Innovation System

- Triple Helix: universities-government-industry
- Shared vision/strategic concepts
- Identification of growth areas
- Regional focus/prioritization
- Functional regions: no geographical distribution rules
- Strong commitment from the business community
- Strong research and innovation environments
- Strategies and resources
- Resources to those with potential to become strong and internationally competitive
- Risk-taking culture: taking care of losers as well as the winners

Commercialization of Research Results from Universities

Requires:

- ❑ Entrepreneurial culture
- ❑ Professional way to commercialize research results from Universities: technology licencing office, incubator programs, venture capital funds, etc.
- ❑ Integrate the commercialization plans already in the process of drafting the research proposals
- ❑ Mobility of people

Strengthening the University-Government-Industry Chain

University-Government-Industry collaboration plays a crucial role in supporting regional competitiveness

- ❑ Eliminate barriers that prevent collaboration
- ❑ Transformation of knowledge to intellectual property
- ❑ Alignment of education systems with the overall market-oriented economic model
- ❑ Release of public research funds for the development of projects useful for the industry

3. Concluding Remarks

New Paradigms for the Future

“International rankings of universities are leading some countries to try to create a few “world class” universities since this is easier and cheaper than raising the quality of the whole higher education system. However, creating “world class” systems rather than a few elite institutions would appear to be a better option for raising quality”.

- ❑ Brain war : growing competition in research
- ❑ Implement a new system for research direction & research performance
- ❑ Integration of tacit knowledge, experience-based/praxis-based and scientific knowledge
- ❑ Building the regional research capacity
- ❑ Strengthen the research management: how to identify strategic areas for research, how to concentrate resources, how to interact with stakeholders, participation in policy discussions, ethics etc
- ❑ Linking universities and other research institutes

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“An *educational system* isn't worth a great deal if it teaches young people how to make a living but doesn't teach them how to make a life.”

Thank You

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