WASHINGTON ACCORD AND THE PROSPECTS OF THE PROFESSIONS IN THE INDUSTRY :UPDATES

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Presented at the

National Academy Of Science And Technology, Philippines

"POLICY FORUM ON S&T HUMAN RESOURCE DEVELOPMENT: LOOKING BACK AND LOOKING FORWARD"

June 30, 2016
Astoria Plaza Manila, Pasig City

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PHILIPPINE TECHNOLOGICAL COUNCIL

- The umbrella organization-Council of the 13 integrated engineering professional organizations in the country (since 1979)
- Advocate of global mobility for engineers
- Pursuing alignment and recognition of Filipino engineering professionals' qualifications at both ***entry*** and independent ***professional*** practice levels

PHILIPPINE TECHNOLOGICAL COUNCIL – MEMBERS

- Society of Aerospace Engineers of the Philippines
- Philippine Society of Agricultural Engineers
- Philippine Institute of Civil Engineers
- Philippine Institute of Chemical Engineers
- Institute of Integrated Electrical Engineers
- Institute of Electronic Engineers of the Philippines
- Geodetic Engineers of the Philippines
- Philippine Institute of Industrial Engineers
- Philippine Society of Mechanical Engineers
- Society of Metallurgical Engineers of the Philippines
- Philippine Society of Mining Engineers
- Society of Naval Architect and Marine Engineers
- Philippine Society of Sanitary Engineers
- **


PROGRESSION TOWARDS
GLOBAL COMPETITIVENESS AND MOBILITY
•MOBILITY
•RECOGNITION
(GLOBAL COMPETITIVENESS)
•ACCREDITATION/CERTIFICATION
•ALIGNMENT
(COULD BE DISRUPTIVE)
6


GLOBAL COMPETITIVENESS?
PROFESSIONAL EXCELLENCE
WHY?
WHO?
WHAT?
WHEN?
HOW?
7

BRANDING

- FILIPINO ENGINEER
- FILIPINO ENGINEERING TECHNOLOGIST
- FILIPINO ENGINEERING TECHNICIAN

PROUD TO BE ONE

FILIPINO ENGINEERING PROFESSIONAL!!

WHAT?

MOBILITY

ABILITY TO PRACTICE ONE'S PROFESSION ACROSS LOCATIONS AND APPROPRIATE FIELDS WITHOUT LOSS OF STATUS.

(REAL OR VIRTUAL MOTION)

WHY?

GLOBAL COMPETITIVENESS
RECOGNITION

INDIVIDUALS LISTED IN THE ENGINEERING REGISTERS HAVE MEET THE QUALIFICATIONS STANDARDS REQUIRED FOR THAT REGISTER.

(IT DOES NOT CONFER RIGHT TO PRACTICE.)

WHAT?

EXEMPLAR STANDARDS (EDUCATION AND COMPETENCE)

EXEMPLARS WHICH DEFINE AGREED EDUCATIONAL OUTCOMES AND COMPETENCY PROFILES TO BE ACHIEVED BY THOSE WHO WILL ENGAGE OR ARE ENGAGED IN THE PRACTICE OF ENGINEERING SUCH AS PROFESSIONAL ENGINEERS, ENGINEERING TECHNOLOGISTS OR TECHNICIANS

WHY?

- FREE TRADE AGREEMENTS ARE FORGED AMONG COUNTRIES, E.G. ASEAN ECONOMIC COMMUNITY
- FACILITATE TRADE IN GOODS AND SERVICES ACROSS BORDERS.
- ASEAN WAS ESTABLISHED IN AUGUST 8, 1967
- ASEAN COUNTRIES (10) FORGED THE ASEAN FREE TRADE AGREEMENT (AFTA) IN JANUARY 28, 1992

ANO BA ANG

ASEAN INTEGRATION?

Or ASEAN ECONOMIC COMMUNITY?

Under the **ASEAN Economic Community framework**, professionals such as doctors, dentist, nurses, architects, accountants, **Engineers and IT professionals** can work within the ASEAN countries in 2015.

THE PHILIPPINES

- Land Area : 300,000 sq.km. over 7,108 islands
- Major Islands: Luzon, Visayas, Mindanao
- Population : 99.14 Million (2014)
- GDP : $284.6Billion (@ 6.5% GR)
- GNP/Capita (PP): $2,872.00
- Major GDP Factors:
  - Services : 57.0%
  - Industry : 31.0%
  - Agriculture : 12.0%

Integrated ASEAN Community

- Land Area : 4.5 Million sq.km.
- Population : 620 Million (2014)
- GDP : $2.60 Trillion
- **Engg Prof : 6.2 Million (1%)**

ASEAN as a SINGLE PRODUCTION and MARKET BASE

Ph Manufacturing Resurgence Program

Incentives:
2016: Php289B
2015: Php239B

Phase I
2014-2017

-Rebuild capacity of existing industries, strengthen emerging industries, maintain competitiveness of comparative advantage industries

Phase II
2018-2021

-Shift to high value added activities, investments in upstream industries
-Link & integrate industries --crucial industrial linkages bet. SMEs & Large establishments

Phase III
2022-2025

-Deepen participation in regional/global production networks
-Become hubs in auto, electronics, machinery, garments, food

SINGAPORE TAKING THE LEAD

Singapore commits record $19b to R&D

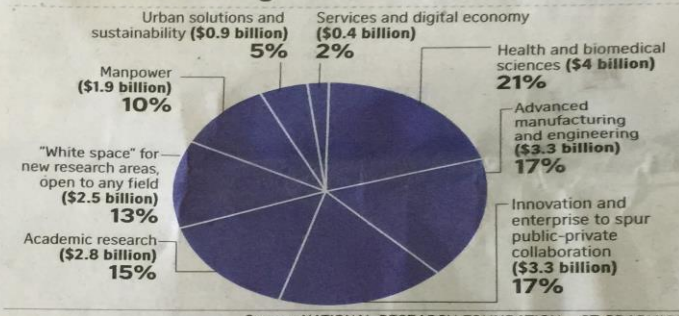
Budget over next five years an investment in talent, possibilities of science, says PM

Chang Ai-Lien and Lester Hio

The nation's science and technology research budget will rise to a record $19 billion in the next five years, as the Government reaffirms its commitment to research here.

"It is an investment in our human talent, in the possibilities of science and what it can do to change our lives, and in our understanding of the world and human knowledge which can be applied in many areas over many, many years," Prime Min-

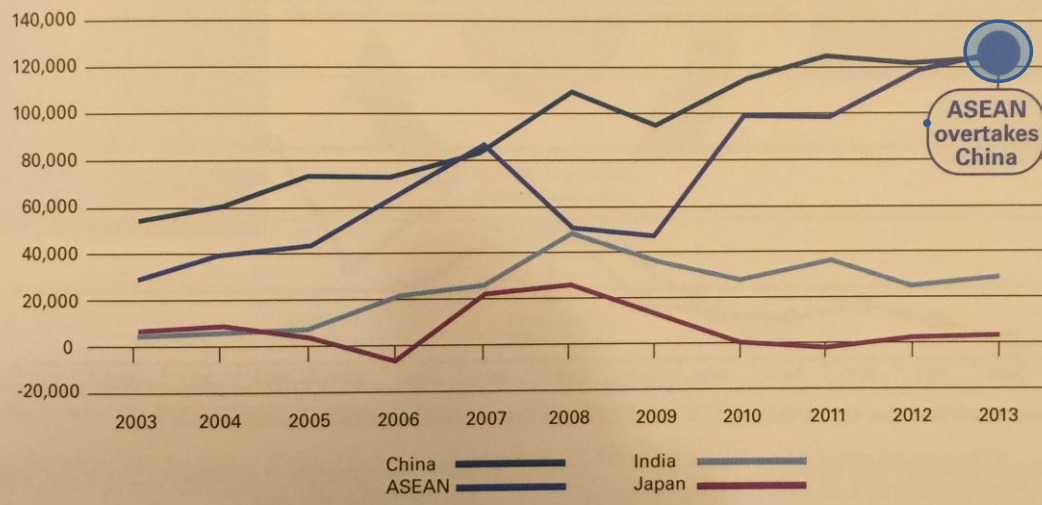
Where funds will go



Source: NATIONAL RESEARCH FOUNDATION ST GRAPHICS

ANNUAL FDI FLOWS TO CHINA, ASEAN, INDIA AND JAPAN

Figure 1. Annual FDI Flows to China, ASEAN, India and Japan (in US$ millions)

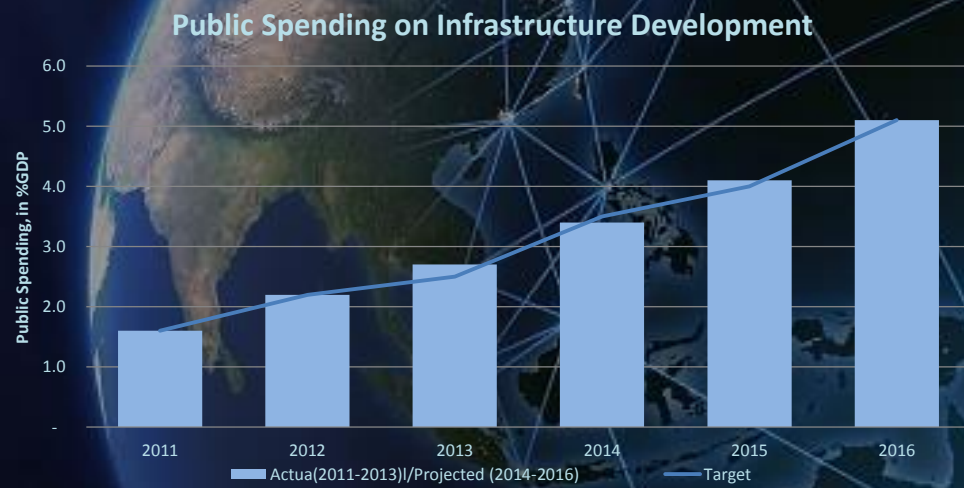


Source: UNCTAD as cited by Wood in J. Wood in Re-drawing the ASEAN map: How companies are crafting new strategies in South-east Asia. The Economist Intelligence Unit, 2014

Other ASEAN countries - Examples

- Malaysia will be a developed country by 2020 – needs 40,000 engineers over 5 years
- Myanmar is only at 15-30% level of its telecom and energy penetration – e.g. needs 52,000 telecom and electric towers over 5 years
- Philippines?

INFRASTRUCTURE DEVELOPMENT SPENDING



Source: National Economic Development Board

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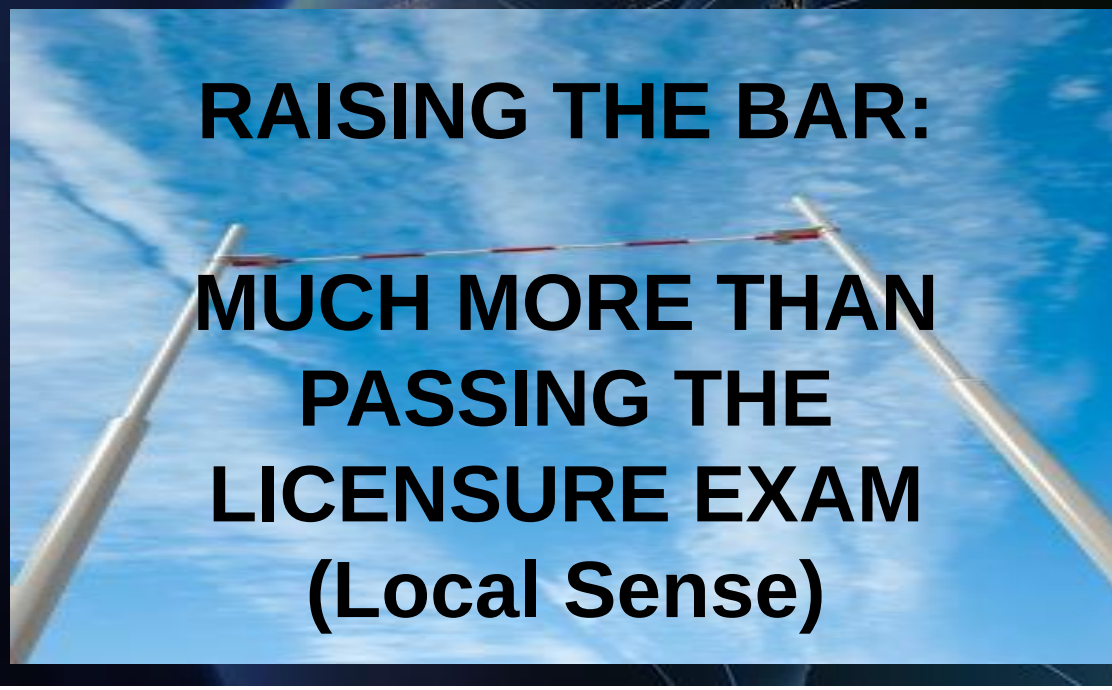
SOME AEC ANALYTICS

Country	Area, Square Kilometers	Population	Labor Force**	GDP, Billion USD*	GDP/Capita, USD	Estimated Number of Engg Professionals	Theo. Number of Engg Prof Required
Brunei	5,765	417,400	203,304	$ 17.10	$ 40,967.90	260	3,049.56
Cambodia	181,035	15,330,000	8,623,857	$ 16.78	1,094.59	20,500	129,357.86
Indonesia	1,904,569	254,500,000	124,061,112	$ 888.50	3,491.16	800,000	1,860,916.68
Laos	236,800	6,689,000	3,377,525	$ 12.00	1,793.99	3,000	50,662.88
Malaysia	329,847	29,900,000	13,300,027	$ 338.10	11,307.69	150,000	199,500.41
Myanmar	676,578	53,440,000	30,217,049	$ 64.33	1,203.78	316,144	453,255.74
Philippines	299,764	99,140,000	43,807,158	$ 284.80	2,872.71	500,000	657,107.37
Singapore	710	5,470,000	3,110,329	$ 307.90	56,288.85	5,000	46,654.94
Thailand	513,120	67,730,000	40,055,849	$ 404.80	5,976.67	1,540,000	600,837.74
Vietnam	331,210	90,730,000	54,207,310	$ 186.20	2,052.24	40,000	813,109.65
TOTAL	***4,479,398***	***623,346,400***	***320,963,520***	***$ 2,520.51***		***3,374,904***	***4,814,452.80***

* Current Prices, World Bank 2014

** 15 years and older and economically active (based on ILO definition)

FACILITATING MOBILITY REQUIRES:



Are we ready for competition?

PROGRESSION TOWARDS GLOBAL COMPETITIVENESS AND MOBILITY

- MOBILITY
- RECOGNITION

(GLOBAL COMPETITIVENESS)

- ACCREDITATION/CERTIFICATION
- ALIGNMENT

(COULD BE DISRUPTIVES)

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MECHANISMS FOR ALIGNMENT AND RECOGNITION OF QUALIFICATIONS

ENTRY TO PRACTICE LEVEL	INDEPENDENT PROFESSIONAL PRACTICE LEVEL
RECOGNITION OF PROGRAMS - GRADUATE ATTRIBUTES	RECOGNITION OF ACQUIRED COMPETENCIES
EDUCATIONAL ACCORDS • WASHINGTON ACCORD • FEIAP GUIDELINES • SYDNEY ACCORD • DUBLIN ACCORD	**ENGINEERING REGISTERS** • APEC ENGINEER • ASEAN ENGINEER • ASEAN CHARTERED PROFESSIONAL ENGINEER • TECHNOLOGISTS & TECHNICIANS

INTERNATIONAL ENGINEERING ALLIANCE (IEA) BODIES

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ENGINEERING REGISTERS

ASEAN ENGINEERS REGISTER

ASEAN ENGINEERING REGISTER, 1998

APEC

APEC ENGINEERS REGISTER 2000/2003

asean

ASEAN CHARTERED PROFESSIONAL ENGINEERS REGISTER, 2005/2013

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ASEAN/APEC ENGINEER: SPECIFIC REQUIREMENTS - 1

A candidate shall demonstrate:

1. **BENCHMARK COMPETENCE STANDARD**
   - **An overall level of academic achievement**;
   - **Professional engineering competence for independent practice** as exemplified in the Agreement;
   - A minimum period of seven years practical experience;
   - Including a minimum period of two years in responsible charge of significant engineering work.
   - Maintain CPE/CPD at satisfactory level

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ASEAN/APEC ENGINEER: SPECIFIC REQUIREMENTS - 2

2. **EQUIVALENCE OF ACADEMIC ACHIEVEMENT**

Engineering Academic qualifications will be deemed to have been met:

a) An engineering degree program at the appropriate level;

1) Delivered and accredited in accordance with the best practice guidelines of FEIAP; or

2) Delivered and accredited by an organization holding full membership of the Washington Accord, or

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ASEAN/APEC ENGINEER: EQUIVALENCE OF ACADEMIC ACHIEVEMENT

b) An appropriate engineering degree program validated by:

3) The Engineer-in-Training examination set by the Institution of Professional Engineers Japan; or

4) The combined Fundamentals of Engineering and Principles and Practices of Engineering Examinations set by the US NCEES (US National Council of Examiners in Engineering and Surveying); or

5) A structured program of engineering education accredited by an agency independent of the education provider, and/or one or more written examinations set by an authorized body within the jurisdiction (provided that the accreditation and/or the examination standards have been endorsed by all members of the Agreement.)

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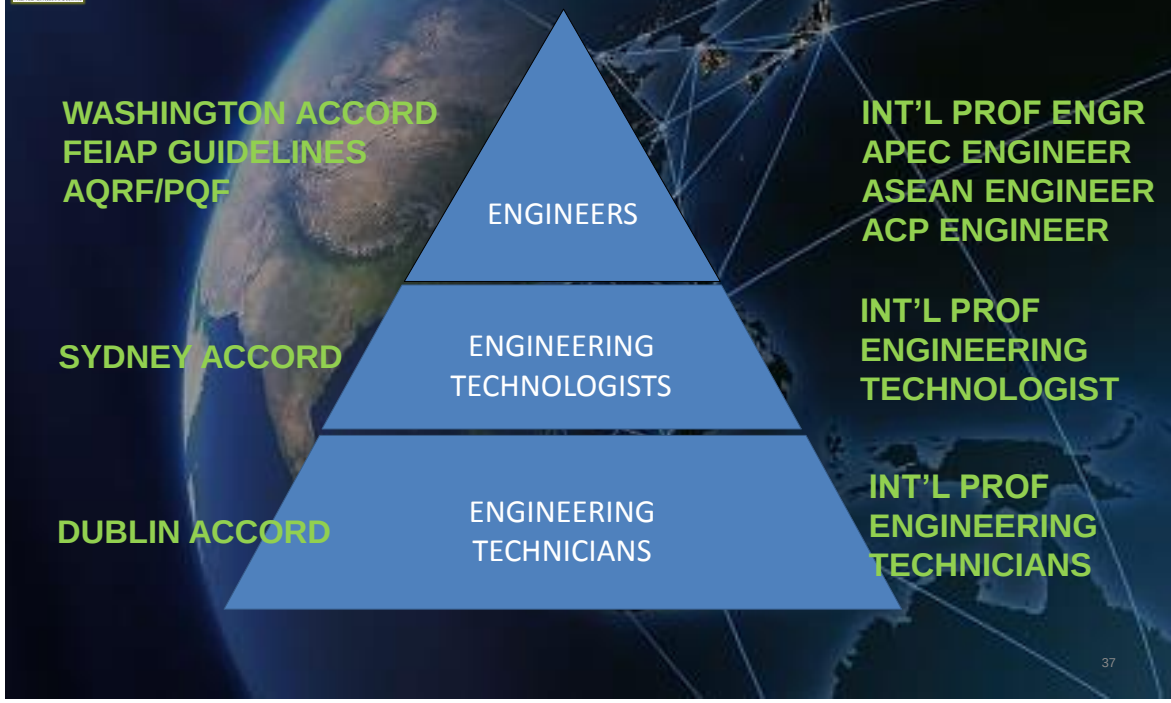
LOOKING BEYOND – TRULY GLOBAL



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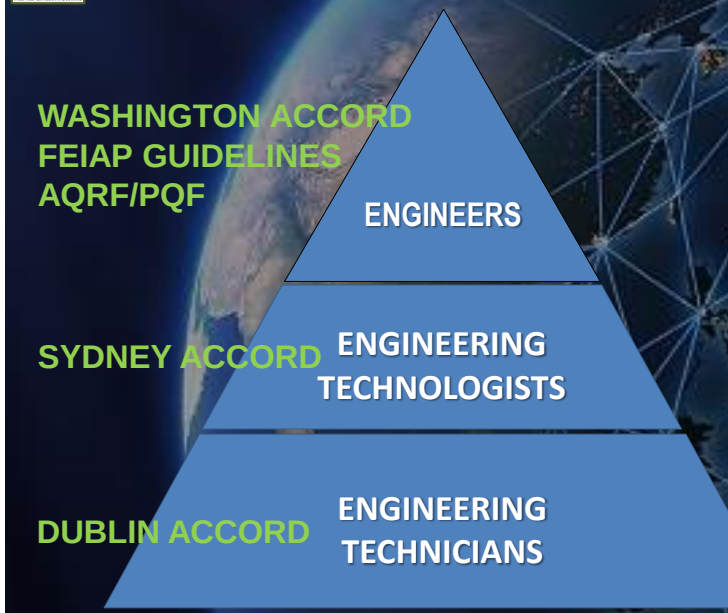
INTERNATIONAL ALIGNMENT OF ENGINEERING-RELATED EDUCATIONAL PROGRAMS

PQF Level/NC	Degree / Diploma/ Certificate Level	Typical Duration	Ref. Graduate Attributes
L-7	Masters Degree Level	1-2 years	Washington Accord
L-6	Baccalaureate Degree Level	4-5 years	Washington Accord
L-5	Advance Diploma	3-4 years	Sydney Accord
L-4/NC-4	Diploma	2-3 years	Dublin Accord
L-3/NC-3	Certificate	Months	
L-2/NC-2	Certificate	Months	
L-1/NC-1	Certificate	Months	

GRADUATE ATTRIBUTES - DIMENSIONS



- RANGE
  - RANGE OF PROBLEM SOLVING
  - RANGE OF ENGINEERING ACTIVITIES
- KNOWLEDGE PROFILE
- SKILLS AND ATTRIBUTES

ABOVE DIMENSIONS DISTINGUISHES THE PROFESSIONAL LEVELS

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CONTACT INFORMATION

PHILIPPINE TECHNOLOGICAL COUNCIL

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University of the Philippines-Diliman
Diliman, Quezon City, Philippines 1101
Telefax: +63 2 926 6893
Email: edo@ptc.org.ph
Website: www.ptc.org.ph

Attn: The Country Registrar

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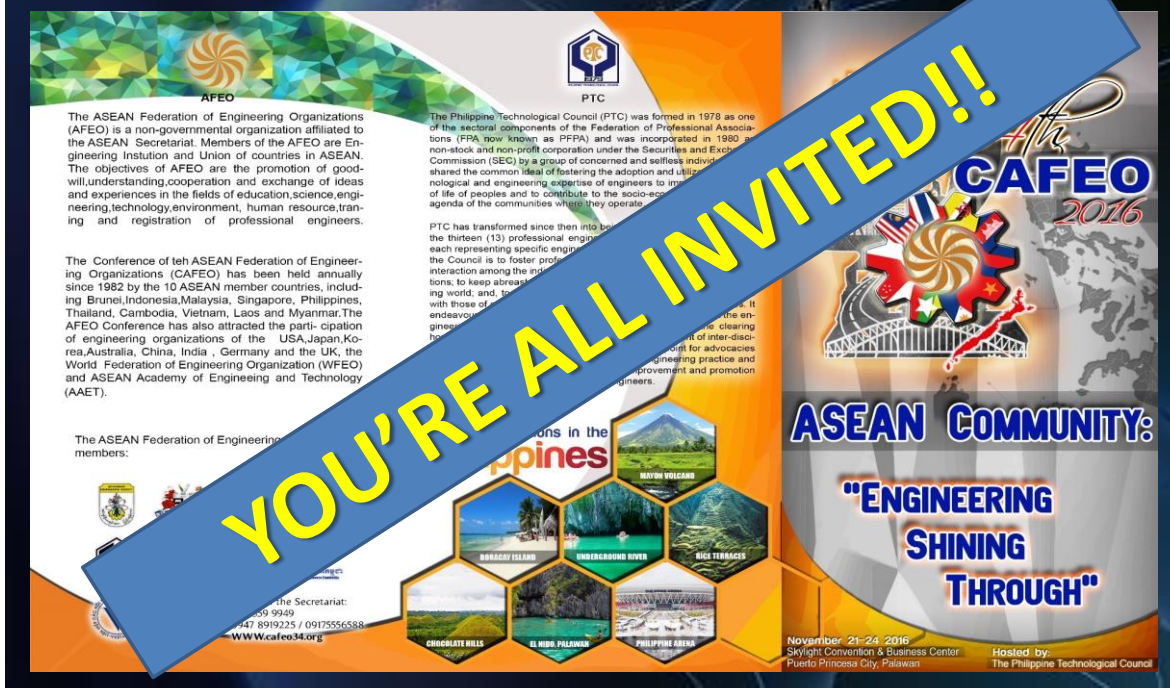
CONFERENCE OF THE AFEO



CAFEO 34

CONFERENCE OF THE
ASEAN FEDERATION OF ENGINEERING
ORGANIZATIONS

November 21-24, 2016
Puerto Princesa, Palawan

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FIVE INTERRELATED AND MUTUALLY REINFORCING CHARACTERISTICS OF AEC IN THE NEXT DECADE

- A Highly Integrated and Cohesive Economy;
- A Competitive, Innovative, and Dynamic ASEAN;
- Enhanced Connectivity and Sectoral Cooperation;
- A Resilient, Inclusive, People-Oriented, and People-Centered ASEAN; and
- A Global ASEAN

ASEAN 2025 – NEXT DECADE EMPHASIS

- the development and promotion of micro, small and medium enterprises (MSMEs) in its economic integration efforts.
- embrace the evolving digital technology as leverage to enhance trade and investments,
- provide an e-based business platform,
- promote good governance, and
- facilitate the use of green technology.

A Highly Integrated and Cohesive Economy

- Trade in Goods
- Trade in Services
- Investment Environment
- Financial integration, Financial inclusion, and Financial Stability
- Facilitating movement of Skilled labor and business Visitors (MNP)
- Enhancing participation in Global Value chains

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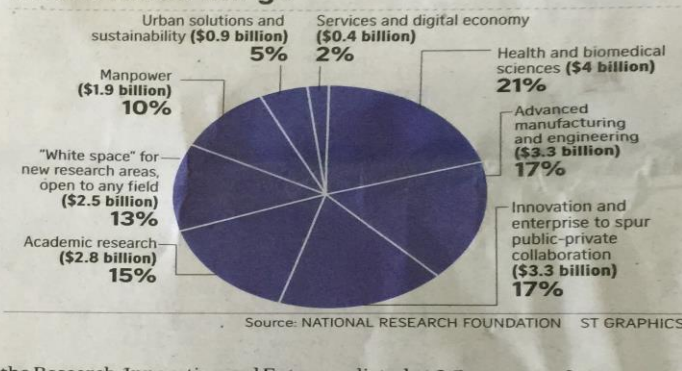

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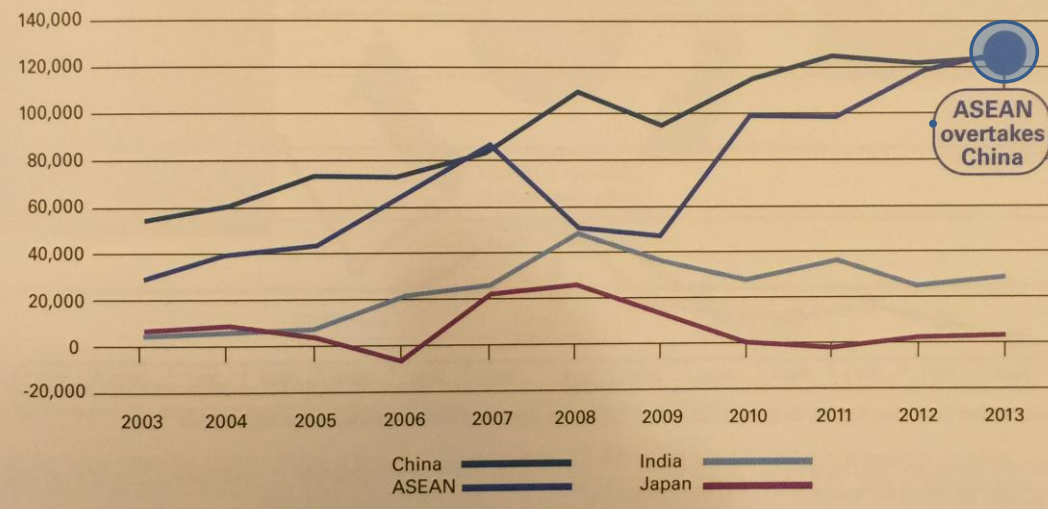

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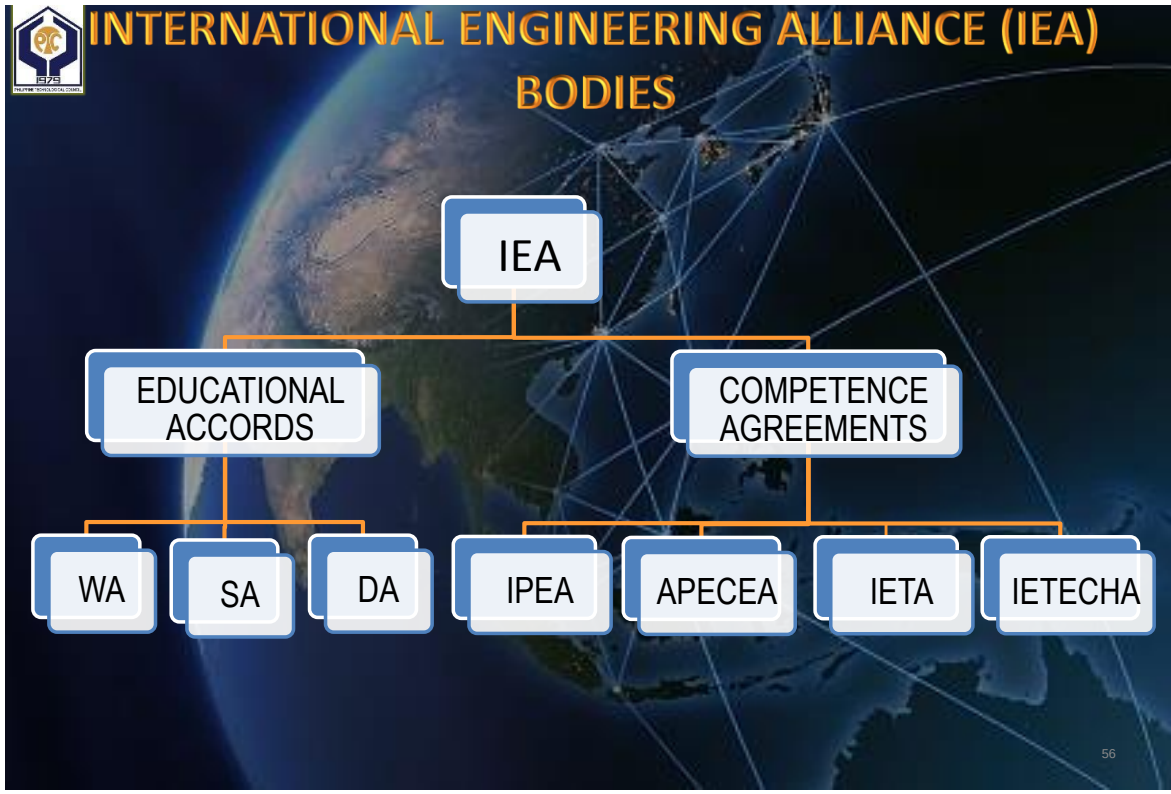
INTERNATIONAL ENGINEERING ALLIANCE (IEA) BODIES
IEA
EDUCATIONAL ACCORDS
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