Job-skills Mismatch in the Philippines and the advent of Industry 4.0

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Deputy Director General, ECOP
OUTLINE

- Employment Situationer
- The Philippine Educational System
- The Gap (Industry-Academe)
- Mismatch
- ECOP Study on Job-skills mismatch
- On Industry 4.0
- Way Forward
Employment Situationer

OVERVIEW OF THE LABOR MARKET: 2016

1 Includes 3.21M employees in government and government-owned or controlled corporations

2 Total employed in 915,726 registered establishments

3 Own-account workers: 10.89M; worked for private establishments: 19.67M; worked with pay in family operated activities: 0.16M; unpaid family workers: 3.37M; household workers: 1.98M

YOUTH UNEMPLOYMENT (15-30 years old): 1,425,000 (OCT 2016)
Youth composes half of the unemployed population

Reference: Philippine Statistics Authority
## Employment Situationer

### UNEMPLOYMENT AND UNDEREMPLOYMENT TRENDS

<table>
<thead>
<tr>
<th>Year</th>
<th>Unemployed (‘000)</th>
<th>Percent</th>
<th>Underemployed</th>
<th>Percent</th>
<th>Employment Generation (‘000)</th>
<th>Employment Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>2,826</td>
<td>7.0</td>
<td>6,762</td>
<td>18.8</td>
<td>974</td>
<td>2.8</td>
</tr>
<tr>
<td>2013</td>
<td>2,905</td>
<td>7.1</td>
<td>7,371</td>
<td>19.3</td>
<td>518</td>
<td>1.4</td>
</tr>
<tr>
<td>2014</td>
<td>2,778</td>
<td>6.8</td>
<td>7,369</td>
<td>18.4</td>
<td>1,000</td>
<td>2.8</td>
</tr>
<tr>
<td>2015</td>
<td>2,606</td>
<td>6.3</td>
<td>7,653</td>
<td>18.5</td>
<td>183</td>
<td>0.5</td>
</tr>
<tr>
<td>2016</td>
<td>2,604</td>
<td>5.5</td>
<td>7,904</td>
<td>18.3</td>
<td>757 (January)</td>
<td>2.0 (January)</td>
</tr>
<tr>
<td>2017</td>
<td>2,441</td>
<td>5.7</td>
<td>6,844</td>
<td>16.1</td>
<td>784</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Source of data: Philippine Statistics Authority, Labor Force Survey

2015 – 2017 Household Population 15 Years Old and Over and Employment Status
# Employment Situationer

## THE EDUCATED UNEMPLOYED – 2017

<table>
<thead>
<tr>
<th>College</th>
<th>No. of Unemployed</th>
<th>% of Unemployed</th>
<th>% of Labor Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduates</td>
<td>403,000</td>
<td>14.60%</td>
<td>0.94%</td>
</tr>
<tr>
<td>Graduates &amp; Higher</td>
<td>457,000</td>
<td>16.55%</td>
<td>1.07%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>860,000</strong></td>
<td><strong>31.15%</strong></td>
<td><strong>2.01%</strong></td>
</tr>
</tbody>
</table>

Total unemployment: 2,761,000

National unemployment rate: 5.7%

Labor Force: 42,776,352

Reference: Philippine Statistics Authority
The Youth Unemployment Problem: Slow school-to-work transition

- It takes a high school graduate up to 3 years to find a first job and 4 years to find a permanent wage job
- It takes a college graduate 1 year to find a first job and up to 2 years to find a permanent job

Reference: Bureau of Local Employment, Department of Labor and Employment; Are Filipino Youth off to a Good Start? Youth Labor Market Experience, ADB Manila
The transition period may include the following:

- Job search behavior
- Short term skills training
- Temporary work, household duties
- NEET – “Not in education, employment, or training”

About 1 in 4 youth are “NEET”. Prolonged periods in NEET can damage youth future labor market prospects

High risk of becoming NEET

- Women (1 in 3 young women)
- Young people from lower income families

Reference: Bureau of Local Employment, Department of Labor and Employment; Are Filipino Youth off to a Good Start? Youth Labor Market Experience, ADB Manila
NEET RATE COMPARISON IN THE ASEAN (%) – 2016

Share of youth not in education, employment, or training total (% of youth population)

1. Indonesia – 22.5%
2. Philippines – 22.2%
3. Thailand – 14.6%
4. Malaysia – 11.7%
5. Vietnam – 0.6%

The Philippine Education System

Through the 1992 Congressional Commission on Education (EDCOM), Philippine Education adapted a trifocal system where three separate agencies govern the three levels of education.
The Philippine Education System

Department of Education (DepEd)

- Oversees the basic education system in the Philippines
- Adapted the K-12 system in 2014 to align with prevailing international practice
The Philippine Education System

K-12 System

• Students receive additional two years of study where they are afforded additional career guidance and are exposed to different tracks for specialization

• As support to the new K-12 system the Department of Labor and Employment developed a career guidance and employment coaching programme for students who are in the last two years of high school (years 11 and 12)
The Philippine Education System

Commission on Higher Education (CHED)

• Supervises the tertiary and higher education level: colleges, universities, professional, and graduate schools

• Mandates, premised by the national government’s commitment to transformational leadership that puts education as the focal point for alleviating poverty, investing in the Filipino people, and building national competitiveness.
The Philippine Education System

Mandates

• Promote relevant and quality higher education where higher education institutions and programs are at par with international standards

• Ensure that quality higher education is accessible to all who seek it particularly those who may not be able to afford it

• Guarantee and protect academic freedom for continuing intellectual growth, advancement of learning and research, development of responsible and effective leadership, education of high level professionals, and enrichment of historical and cultural heritages

• Commit to moral ascendancy that eradicates corrupt practices, institutionalizes, transparency and accountability and encourages participatory governance in the Commission and sub-sectors.

Note: Involving industry in the development of quality higher education is not part of the CHED’s mandates. Direct participation of business and industry in higher education via the CHED is yet to be institutionalized.
The Philippine Education System

Technical Education and Skills Development Authority (TESDA)

- Main agency responsible for supervising technical vocational training.
- Mandated to mobilize industry, labor, local government units, and technical-vocational institutions, in the skills development of the country’s human resources.
The Philippine Education System

Mandates

• Devolve training functions to local governments
• Reform the Apprenticeship program
• **Involve industry/employers in skills training**
• Formulate a skills development plan
• Develop and administer training incentives
• Organize skills competitions
• Manage skills development funds

Direct reference to involving industry and employers in skills development
The Gap (Industry-Academe)

Traditional Understanding

The Training Problem

How it should be:

What Causes the Gap?

“Despite the fact that the principle of academia-industry partnership has been adopted by many institutions, both private and public, in the past decade or more, its full potential is far from being utilized due to the basic attitudinal differences and driven interests of the stakeholders thereby making the partnership problematic.”

What Causes the Gap?

Academe-industry partnership in the Philippines: Nature, Benefits, and Problems

• “Organizational, administrative, and management aspects”
• Divergence of objectives between the academe and industry, most often caused by changes in priorities on the industrial side.
• Lack of professional approach in maintaining the collaboration.

• Lack of incentives for industry who see industry-academe linkage initiatives as a form of voluntary CSR
• Low awareness prevents the private sector from fully taking part, and from fully benefitting from existing government policies and programmes.

Apprenticeship in the Philippines

House of Representatives

- Seven (7) measures on a revised apprenticeship program filed as of 19 February 2018
- Pending since 2016.
- House Bills 353, 1649, 3942, 5483, 5879, 6001, 6665

Senate Bill No. 1392 by Senator Joel Villanueva – An Act Providing for a Revised National Apprenticeship Program, Clarifying the Standards for Training and Engagement of Apprentices and Accreditation of Apprenticeship Programs, Repealing for the Purpose Chapters I and II of Title II, Book II of Presidential Decree No. 442, As Amended

Pending Second Reading since March 15, 2017
Salient Features of the Senate Bill

- Limited to cover only “critical, in-demand and hard-to-fill occupations”

- TESDA determines whether occupations are apprenticeable by TESDA, upon the recommendation of recognized Industry Boards/Bodies

- Minimum of 6 months, and can last longer, based upon the duration of the training necessary and the complexity of the skills being taught. Ultimately, the TESDA Board still has to approve the Enterprise Apprenticeship Program.

Reference: Ramon Miguel G. Abola, Office of Senator Joel Villanueva
Salient Features of the Senate Bill

• Mandates the creation of a Bipartite Enterprise Apprenticeship Committee – comprised of labor and management – in each participating enterprise, with the following functions:

1. Monitors program implementation
2. Settles differences between management and apprentices
3. Recommends measures for effective implementation
4. Approves every apprenticeship contract entered upon
5. Conducts “aptitude examinations” of apprentices (though it is unclear for what purpose)

Reference: Ramon Miguel G. Abola, Office of Senator Joel Villanueva
Salient Features of the Senate Bill

• Enterprises are required to register with the TESDA its apprenticeship program, including the certificate of undertaking, the training plan, and the creation of the Bipartite Enterprise Apprenticeship Committee.

• The TESDA must approve the training plan to be submitted by enterprises, subject to compliance with criteria set in the laws, with endorsement of the industry board, and after consultation with workers’ group and industry representatives.

• The TESDA is charged with the responsibility of monitoring apprenticeship activities to ensure enterprises’ compliance with all government regulations affecting apprenticeship and to protect the rights of apprenticeship.

Salient Features of the Senate Bill

• No enterprise can get apprentices beyond 20% of its regular employees. Any employee in excess of the 20% cap shall be considered a regular employee of the enterprise.

• The TESDA must conduct regular compliance audits with all enterprises with approved apprenticeship programs.

• Enterprises may avail of incentives by allowing them to deduct from taxable income $\frac{1}{2}$ of allowable training expenses incurred under the apprenticeship program, but not to exceed 10% of the direct labor wage, and provided, however, that enterprises that wish to avail of such incentives must pay their apprentices the full wages.

Salient Features of the Senate Bill

• Apprentices hired by enterprises for jobs where they have completed their apprenticeship shall be exempted from going through the usual probationary period of employment

• TESDA has the authority to close apprenticeship programs not registered with or approved by TESDA, without prejudice to administrative, civil, or criminal prosecution

Too tedious and restrictive

- Everything has to be approved by the TESDA, the administrative aspect might be too cumbersome for a very busy employer.
- Positions are limited to “hard to fill” jobs only. This greatly limits the potential of the apprenticeship program as an effective training modality.
- Possible criminalization for violations regardless of how minor. Lack of trust.

These are important points to consider, especially since apprenticeship in the Philippines is voluntary. There might not be enough incentives for enterprises to adapt the apprenticeship system.

The only incentive is the tax deduction. Philippine employers have yet to realize the long-term benefit of apprenticeship, and other enterprise-based training systems, which is the production of workers that suit industry needs.
Consequences of the Gap

Limited Labor Market Information

- A crucial component for schools to become more responsive to the needs of the industry which is essential to the updating of course offerings to address the needs of industry and the economy

- The link between jobs and labor market is hampered by the lack of available information on supply and demand.

- The DOLE is unable to provide estimates of current and future demands. Due in part to the limited information that industry is able to provide.
Consequences of the Gap

Limited Labor Market Information

• “The problem is identifying the number of how many are really in demand for a specific occupation or skills. In our consultations, the employers cannot say. They know they lack this and that but in terms of how many, they could not tell us. They should be able to tell us”.

Director Dominique Tutay, DOLE-BLE
Consequences of the Gap

Job-skills mismatch

• A major cause of youth-unemployment, which accounts for half of the country’s total unemployment rate.
Mismatch Defined

<table>
<thead>
<tr>
<th>Skills Mismatch</th>
<th>Qualification Mismatch</th>
<th>Regional and Sectoral Mismatch</th>
</tr>
</thead>
</table>
| Mismatch between the skills (i.e. generic, technical and soft skills) held by workers and those required by their jobs. Skills mismatches involve:  
- **Skill deficit (skill gap)** - worker’s skills are not up to the requirements of the job  
- **Skill underutilisation (overskilling)** - arises when skills exceed those required by the job. | Mismatch between educational qualifications (i.e. formal academic skills) held by workers and those required by their jobs. Two situations may arise:  
- **Over-education** - a worker has more educational qualifications than those required  
- **Under-education** - a worker has fewer educational qualifications than those required. | Depending on regional and sectoral employment and unemployment dispersion, this arises when the locations and sectors where job openings are available are poorly matched with potential employees. |

Reference: Bureau of Local Employment, Department of Labor and Employment; 2012 European Commission, Europe 2020
Relationship Between Skills Supply and Demand

Reference: Bureau of Local Employment, Department of Labor and Employment; 2012 European Commission, Europe 2020
ECOP Study on Job-Skills Mismatch


Research Objectives:

• To improve labor market outcomes in the Philippines through better matching between skills demand and supply in the automotive, electronics, and hospitality sectors

• To influence the government to reflect employers’ views and needs in the national skills policy framework

ECOP Study on Job-Skills Mismatch

Approach: Understanding from Different Perspectives

I. INDUSTRY
- REVIEW OF LITERATURE (CURRENT POLICIES/PROGRAMS)
- STATISTICAL DATA
- COMPETITIVENESS METRICS

II. INDIVIDUAL COMPANY
- HR DECISION MAKERS
  - BY SECTOR
- HR DECISION MAKERS
  - IN EACH SECTOR

- GOVERNMENT AGENCIES
- INDUSTRY REPRESENTATIVES

• Total interviews: 8 key informants among relevant government agencies, industry experts
• Total surveys: 33 companies

## Research Findings

Job-skills mismatch is one of the top 3 concerns of employers

<table>
<thead>
<tr>
<th>CONCERN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Poaching</td>
<td>49%</td>
</tr>
<tr>
<td>Short labor supply</td>
<td>46%</td>
</tr>
<tr>
<td><strong>Job-skills mismatch</strong></td>
<td><strong>42%</strong></td>
</tr>
<tr>
<td>Poaching from overseas</td>
<td>39%</td>
</tr>
<tr>
<td>High minimum wage rate</td>
<td>21%</td>
</tr>
<tr>
<td>Low productivity</td>
<td>21%</td>
</tr>
</tbody>
</table>

Research Findings

There are three (3) main causes of job-skills mismatch

• Weak labor-market information system
• Job seeker’s career preference is no longer in-demand
• Inadequate preparation: education, training, and guidance

Research Findings

Graduates are not job ready, significant training by employers are still required.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Average rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Education and Skills Development Authority (TESDA)</td>
<td>2.35</td>
</tr>
<tr>
<td>Public high schools</td>
<td>1.67</td>
</tr>
<tr>
<td>Private high schools</td>
<td>1.90</td>
</tr>
<tr>
<td>State colleges and universities</td>
<td>2.52</td>
</tr>
<tr>
<td>Top tier colleges and universities</td>
<td>2.79</td>
</tr>
<tr>
<td>Other private colleges and universities</td>
<td>2.48</td>
</tr>
</tbody>
</table>

Note: Four-point rating scale: 4 – sufficient, no further training needed; 3 – adequate with minimal additional training needed; 2 – basic preparation, additional training required; 1 – inappropriate, complete re-training required. Total sample size is N=33.

Research Findings

Companies cope by conducting own training

Table 9: Training Programs Provided by Companies

<table>
<thead>
<tr>
<th>Training Program</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation for new hires</td>
<td>97%</td>
</tr>
<tr>
<td>Technical training for new hires</td>
<td>76%</td>
</tr>
<tr>
<td>Apprenticeship programs/On the job training</td>
<td>73%</td>
</tr>
<tr>
<td>Continuing education for current employees</td>
<td>67%</td>
</tr>
<tr>
<td>Dual-Tech training for potential employees</td>
<td>24%</td>
</tr>
<tr>
<td>All of the above</td>
<td>6%</td>
</tr>
<tr>
<td>None</td>
<td>0%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>9%</td>
</tr>
</tbody>
</table>

Research Findings

There isn’t enough information available to guide planning

Research Findings

Comprehensive policy/program coverage by different government agencies & the private sector

However, employers are not familiar with some of the initiatives.

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Aware</th>
<th>Not Aware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic, K-12 (DepEd)</td>
<td>91%</td>
<td>9%</td>
</tr>
<tr>
<td>On the Job Training (DOLE)</td>
<td>88%</td>
<td>12%</td>
</tr>
<tr>
<td>Public Employment Service Office (Local)</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>PhilJobsNet (DOLE)</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>DualTech (TESDA)</td>
<td>67%</td>
<td>33%</td>
</tr>
<tr>
<td>Special Program for the Employment of Students (DOLE)</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>JobStart Philippines (DOLE)</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>Philippine Qualifications Framework</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Mutual Recognition Agreements</td>
<td>39%</td>
<td>61%</td>
</tr>
</tbody>
</table>

Research Findings

Programs where employers are engaged receive higher effectiveness ratings

<table>
<thead>
<tr>
<th>Programme</th>
<th>Aware</th>
<th>Not aware</th>
<th>Average effectiveness rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic K-12 (DepEd)</td>
<td>91%</td>
<td>9%</td>
<td>2.6</td>
</tr>
<tr>
<td>On the Job Training (DOLE)</td>
<td>88%</td>
<td>12%</td>
<td>3.3</td>
</tr>
<tr>
<td>Public Employment Service Office (Local government units)</td>
<td>82%</td>
<td>18%</td>
<td>2.6</td>
</tr>
<tr>
<td>PhilJobsNet (DOLE)</td>
<td>79%</td>
<td>21%</td>
<td>2.1</td>
</tr>
<tr>
<td>DualTech (TESDA)</td>
<td>67%</td>
<td>33%</td>
<td>3.1</td>
</tr>
<tr>
<td>Special Program for the Employment of Students (DOLE)</td>
<td>58%</td>
<td>42%</td>
<td>2.8</td>
</tr>
<tr>
<td>JobStart Philippines (DOLE)</td>
<td>52%</td>
<td>48%</td>
<td>2.8</td>
</tr>
<tr>
<td>PQF (Executive Order 83)</td>
<td>45%</td>
<td>55%</td>
<td>2.4</td>
</tr>
<tr>
<td>MRA</td>
<td>39%</td>
<td>61%</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Note: Four-point rating scale: 4 – very effective; 3 – moderately effective; 2 – minimally effective; 1 – not effective at all.

Research Findings

Programs employers recognize had some potential but were poorly executed:

• K-12 programme (2.6)
• Public Employment Services Office (2.6)
• PhilJobs Net (2.1)

On Industry 4.0

“The so-called future of work, brought about by rapid technological developments and fast-paced industry advancements and overall work landscape, plays a huge role in the prevailing mismatch between labor demand and labor supply in the country. In order to address this, current and future skills needs should be closely monitored and anticipated. Aside from this, specific interventions in the form of policies, programs, and projects need to be utilized and implemented in order to maneuver the future of work.”

TESDA Deputy Director General, Rose Urdaneta (2016)
On Industry 4.0

The advent of the 4th Industrial Revolution is expected to have magnanimous implications towards skills development in the Philippines

• Big data, cloud computing, robotic process automation, and the inter-connected web, among other concepts, are considered a new industrial revolution because of its massive scope that disrupts various sectors and its speed which has the capacity of rendering entire systems obsolete in months.

49% of Philippine Industries are at a high risk of automation over the next 20 years, and 80% of those affected will come from the Business Process Outsourcing (BPO) and the Electronics and Electrical Products Sectors.

Reference: Philippine country paper, ACE Workshop on Skills Development (December 11-12, 2017, Bangkok Thailand)
On Industry 4.0


• Several BPOs are already making use of chatbots in their services

• Collaborative robots “cobots” are already being utilized in the Electronics sector to perform manual tasks and complements the work of highly-skilled personnel.

• Workers in the construction, manufacturing, and hotels and restaurant industries also have a high risk of being automated.

• Out of all the workers, those that are low-skilled, as well as women, youth and less-educated workers could feel the impact of automation in the country.

Reference: Philippine country paper, ACE Workshop on Skills Development (December 11-12, 2017, Bangkok Thailand)
On Industry 4.0

The DOLE identified the following industries as Key Employment Generators for 2017-2022. Four are at a high risk of being automated.

<table>
<thead>
<tr>
<th>Industry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>Agribusiness</td>
</tr>
<tr>
<td>Industry</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Services</td>
<td>Hotel, Restaurant, Tourism</td>
</tr>
<tr>
<td></td>
<td>Health and Wellness</td>
</tr>
<tr>
<td></td>
<td>IT-BPM</td>
</tr>
<tr>
<td></td>
<td>Transport and Logistics</td>
</tr>
<tr>
<td></td>
<td>Wholesale and Retail Trade</td>
</tr>
<tr>
<td></td>
<td>Banking and Finance</td>
</tr>
<tr>
<td></td>
<td>Education</td>
</tr>
</tbody>
</table>

Upskilling, re-skilling, and retooling is necessary

Reference: Philippine country paper, ACE Workshop on Skills Development (December 11-12, 2017, Bangkok Thailand)
ICT in the Philippines: mid-level readiness

Networked Readiness Index
Indicators (9 best)

- **(Blue)** Laws relating to ICTs – 5th
- **(Green)** Importance of ICTs to government vision – 5th
- **(Orange)** Impact of ICTs on business models – 5th
- **(Yellow)** ICT use for business to business transactions – 6th
- **(Purple)** ICT use & govern’t efficiency – 6th

Reference: Network Readiness Index 2016
Employers and Industry 4.0

Drastic changes to the overall business landscape

• New work arrangements that are potentially disruptive (telecommuting, cloud coordination which leads to more flexible working hours).

• Increased pressure to upgrade equipment and infrastructure for competitiveness. Potentially challenging for micro, small, and medium enterprises (MSMEs). 99.6% of Philippine industry are MSMEs.

Implications on reskilling, upskilling, and retooling employees to use the new technologies available.

Will necessitate increased coordination among the tripartite social partners (government, employers, and workers)

Reference: Philippine country paper, ACE Workshop on Skills Development (December 11-12, 2017, Bangkok Thailand)
Private sector initiatives

The private sector has taken an active part in training and has partnered with educational institutions to upgrade skills and familiarize graduates or graduating students with more current technology to serve their immediate requirements.
Private sector initiatives: IBM Philippines

Social, Data, and Cloud has changed the way we work.

Deploying in the Cloud and using mobile systems allow greater flexibility and turn HR systems into an engaging platform.

Fostering personalized learning is the key in reinforcing culture and strategy.
Private sector initiatives: Sectoral

IT and Business Process Association of the Philippines (IBPAP)
Accelerate PH IT-BPM Roadmap 2022
ASEAN Example: Singapore

SkillsFuture Singapore (SSG)

• Aims to promote a culture of lifelong learning in Singapore.
• A national movement that aims to provide Singaporeans with the opportunities to develop their fullest potential throughout life, regardless of their starting points.
• Works with both educational institutions and industry to ensure skill requirements are met.

On responding to Industry 4.0

• The Government Technology Agency of Singapore will sign a memorandum of intent with the National University of Singapore to provide training in data science for 10,000 workers over the next 5 years.
• The Economic Development Board is working to help companies adapt to digitalization and develop new products, services, and business models, as well as help SMEs build stronger digital capabilities.

Reference: Singapore country paper, ACE Workshop on Skills Development (December 11-12, 2017, Bangkok Thailand)
Way forward: Recommendations

Strengthen the Labor Market Information system

• Quality and quantity of information
• Expanding accessibility
• Improve delivery mechanisms to include the PESO.

Advocate for greater Research and Development Spending

• To ensure education/training institutions keep up with pace of changing technology

Way forward: Recommendations

Education

• Institutionalize private sector involvement to ensure more market oriented education/training

• Advocate for complementing technical education with soft-skills

• Strengthen support for science and technology

Way forward: Recommendations

Academe-industry linkages must be incorporated into the mission of industries

More incentives for enterprises to take part in industry-academe partnerships

Develop a culture of trust in order to forge stronger partnerships

thank you!