Teaching Standards: Experiences in Korea and APEC

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Chief Researcher,
Korean Standards Association

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Donggeun Choi (PhD in Technology Innovation Management)  
- Work, Education, Activities

- **Works**
  - Chief Manager, Korean Standards Association (KSA) (2000-present)
  - Guest Researcher, Standards Coordination Office, NIST (2012.3–2013.2)
  - Researcher, Korea Development Institute (KDI) (1999-2000)

- **Education**
  - PhD in Technology Innovation and Management at Sungkyunkwan University
  - Master in transportation management from Seoul National University (Feb 2000)
  - Bachelor in transport engineering from Hanyang University

- **Major Professional Activities**
  - Vice-Chair, International Cooperation for Education about Standardization (2012 – 2015)
  - Project Editor/Initiator of Education Initiative, APEC Sub-Committee on Standards and Conformance (2007-2011)
  - Korean Delegates, APEC Sub-Committee on Standards and Conformance (SCSC) (2004–)
  - Secretariat, ISO TC204 Ad hoc workgroup on Ubiquitous-City Standards (2008-2009)
  - Director, International Cooperation Committee, Society for Standards and Standardization (2011–)
  - Advisory/Program committee, SIIT (Standards and Innovation on Information Technology) Conference 2011, 2013
# Eagles’ View in APEC region

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<tr>
<th>Country</th>
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<td>PJ 2013~14(5)</td>
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<tr>
<td>Korea</td>
<td>±50</td>
<td>(KSA 2003~)</td>
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<tr>
<td>China</td>
<td>±30</td>
<td>(CJLU, CNIS..)</td>
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<tr>
<td>Japan</td>
<td>±8</td>
<td>(JISC, JSA)</td>
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<td>U.S.</td>
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# Korea’s Experience - Overview -

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Korea’s Experience  
- Primary School: Meet Standards

- Program started in the second half of 2008
  - 2008~2010: Invited Lecturer Visited for 40-80min class
  - Textbook was accredited by Seoul Edu. Gov. (Extra-Curri)

- Guest teachers of standards experts
  - To show that standards are a part of everyday life
  - To share standard-experience with students

- Textbook for Elementary School
  - “Standards in Dairy Life”
    Chapter 1. Why standards?
    Chapter 2. Our lives with standards
    Chapter 3. Daily standards
    Chapter 4. Our promise, standards
Korea’s Experience
- Secondary School : Explore Standards

**Purpose**

- To bring standards to the real life
- To explore the standards world
- To recognize outstanding achievement using standards

**Strategy**

- To encourage students to participate in standardization activities
- To develop the standards education course into the regular curriculum
- To compete for the “Standards Olympiad”

**Regular curriculum incorporated in 2011**
- “Technology & Housework” for middle School
- “Engineering & Technology” for high School

**“Standards Olympiad” since 2006**
- Around 1,000 students apply each year
Korea’s Experience
- University – Evolutions (1)

Number of UEPS courses and participating students

Share of different categories of different UEPS courses
Korea’s Experience - University – Evolutions (2)

**Preparatory Stage**
- 2002~04
  - Long Term Planning
  - Common Syllabus Development/Publishing
  - Common Textbook Development/Publishing
  - Pilot General Course Launched

**Expanding Stage**
- 2005~2009
  - Nationwide Promotion/Expansion
  - Teacher’s Pool Expansion
  - Common Textbook Revision/Publishing
  - Major-Specific Textbook Development

**Transforming Stage**
- 2010~
  - Major-Specific Course Launched
  - Graduate Course Launched
  - Major-Specific Textbook Revision
  - Case Studies Development/Publishing
APEC Education Initiative - Overview in 2005-2011

- Phase 1
  - Guide 1 ★ (Mar 2008) Curricula
- Phase 2
  - Guide 2 ★ (Jun 2009) Outreach
  - Guide 3 ★ (Jun 2010) Textbook
- Phase 3

3 projects
4 publications
7 meetings
agenda website

2005 Korea
2006 Vietnam
2007 Australia
2008 Peru
2009 Singapore
2010 Japan
2011 USA

Website (www.WiseStandard.org)

Website (www.WiseStandard.org)

Proposed 05.9
Agenda 06.2
SCSC ToR 06.11
1st 07.1
2nd 07.6
3rd 08.2
4th 08.8
5th 09.2
6th 10.2
7th 11.2

3 projects
4 publications
7 meetings
agenda website

Website (www.WiseStandard.org)
APEC Education Initiative
- Guide 1 Survey + Curri Model
- Guide 2 Outreach Strategy

APEC Sub-Committee on Standards & Conformance (SCSC) Education
Guideline 1: Case Studies of How to Plan and Implement Standards
Education Programs and Strategic Curriculum Model, March 2008

Sub-Committee on Standards and Conformance (SCSC) Education
Guideline 2: APEC Strategy for Education and Outreach on Standards,
Conformity Assessment and Technical Regulations (SCATR), July 2009

CTI Sub-Fora & Industry Dialogues, Sub-Committee on Standards and Conformance (SCSC)

The “APEC Strategy for Education and Outreach on Standards, Conformity Assessment, and Technical Regulations” aims to expand and enhance general awareness of SCATR among professionals from a variety of backgrounds and, more specifically, to conduct education outreach among current public-...
APEC Education Initiative - Guide 3 Textbook (ToC)

Part I. FUNDAMENTALS
- Chapter 1 Definitions and Functions (Prof. Minabu Eto, JP)
- Chapter 2 Lifecycles, Organizations, and Development Procedures (Prof. Minabu Eto, JP)
- Chapter 3 Conformity Assessment (Prof. Mingshun Song, CN)

PART II. IMPACTS
- Chapter 4 Economic Impacts - Macro Perspective (Mr. John Henry, AU)
- Chapter 5 Economic Impacts - Micro Perspective (Mr. John Henry, AU)
- Chapter 6 Legal Impacts (Mr. John Henry, AU)

PART III. BUSINESS STRATEGY
- Chapter 7 Standardization and Innovation (Prof. Hee-Sang Lee, KR)
- Chapter 8 Competitive Strategy (Prof. Byung-Goo Kang, KR)
- Chapter 9 Collaborative Strategy (Prof. Hee-Dong Yang, KR)
- Chapter 10 Two Case Studies of ICT Standard (Prof. HeeJin Lee & Prof. Hee-Dong Yang, KR)

ANNEXES A. B
## APEC Education Initiative - Guide 4: Pilot Implement

<table>
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<th>Ch. University (Economy)</th>
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Total: 468 Students in 14 Universities
Title

- Inspiring Next Generation of Standards Professional Development: Phase I. Identifying Stakeholder Requirements

Topics for Case Study Series

- This project is designed to define next generation of standards professional, future human resources in the area of standards and conformity assessment, so as to improve the competitiveness of the APEC Member economies.
- Even though standards education activities have increased during the last decade in the region, the concept of 'standards professional' has been hardly defined and the needs of stakeholders have not been clearly disclosed yet. APEC-wide survey, in-depth interviews with thought-leaders in various stakeholders, and a workshop will be held to shed light on identifying, first, the current and future workforce requirements and, second, the gap between demand and supply side for standards professionals collected from stakeholders.
- The project will identify the stakeholder requirements for standards professionals in public and private stakeholders, and provide recommendations on how best to meet these requirements.
Summary

- Education may involve pre-school to biz executives
  - Herein formal education level with a focus of university
- In Asia, Education about Standards are observed more active explicitly with mostly top-down approach
  - Korea, China, Indonesia, Japan are very active
    - All initiated by national policy based sponsorship initiated by governments or standards organizations
  - Korea proposed and lead APEC standards education initiative, and provided common ground and productive outreach
  - Malaysia, Peru started, and a few others to do national projects
    - Similar type of movements
- In North America and Europe, Less activities are observed with limited national level of projects or activities (some exceptions)
Observations

- I-SDOs, NSBs, SDOs leadership/partnership
  - Leadership to initiate or trigger standards education
  - Partnership with university, industry, and governments

- Government
  - Building linkage with STEM education initiative
    (Standards in/for Science, Technology, Education, Math)
  - Funding and national level program
    - Primary/Secondary/Higher education
    - Future employees in Industry, Governments, Standards organizations
  - Cooperation with Academia, and trade associations, consumer representatives as well as NSBs
    - Korea: Society for Standards and Standardization (SSS)

- Human Resources Development to improve competitiveness