Teaching Innovation and Entrepreneurship: How Can Universities, Industry and Government Encourage the Next Generation

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Outline

- Introduction
- Approach to Learning
- Approach to Research
- Approach to Student
- Lessons Learned
- Closure
Introduction

- Youth and students are agent of changes.
- University is the center of the changes in the society and nation.
Introduction

- Innovation could be seen as a way to a sustainability, in facing new challenges.
- First in mind: "All experts are the expert on what was. There is no expert for the future. To become an expert in the future, imaginations must replace experiences." (Inspired from the book of Startup Nation, 2012).
- Idea, creativity and innovation could get a way to sustainable impacts with a help of good entrepreneurship.

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Good researchers have two important missions:

1. To develop knowledge cycles
2. To deliver solutions of relevance, in the right context.

Mukhtasor, 2015
Introduction

- We need approaches to encourage our next generation towards innovation and entrepreneurship.

Who are we? A collaboration among universities, industries and governments.

- How can we could encourage the next generation? Here is approaches to learning, to research, and to the next generation.
Innovation and entrepreneurship require a higher level of thinking, skills and capability that could not be served by simple classroom teachings.

A life long learning approach is required to develop capabilities in the right context. Such a learning could be derived from a collaboration in dealing with a complex problem of real life and challenges.
Approach to Learning

Lifelong Learning Approach
“lasting or continuing through life”

- Reading
- Watching & Listening
- Research
- Archiving
- Reflecting
- Collaborating
- Participating
- Project Integration

Source: http://edreach.us

Mukhtasor, 2015
Approach to Research

Development of knowledge cycles

Novelty

Uniqueness

Contribution

Mukhtasor, 2015
Relevances

- Researcher may have high ideas or thoughts, but those should be in line with the context of social, economic or humanity.

- Innovation could be fostered and implemented for bigger impacts through entrepreneurship or techno-preneurship.

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Approach to the Next Generation

Difficult People Make Difficult Times
Approach to the Next Generation

Types of Difficult People

The Know-It-Alls  The Passives  The Dictators  The “Yes” People  The “No” People  The Gripers

Mukhtasor, 2015
Approach to the Next Generation
Approach to the Next Generation

Private Sector/Business

- Opportunities to provide public services through private organizations

Public Sector/Government

- Basic infrastructures
- Preferences for Choice
- Reliance on Business and Nonprofit Service Providers

Third Sector/Nonprofits

- Demands for Accountability
- Demands for Sustainability
- Gaps in Public Service Delivery

Profits

- Corporate Social Responsibility
- Earned-Income Ventures

Values

- Social Entrepreneurship
- Third-Party Government

Services

- Public-Private Partnership
- Competitive Sourcing

Modified from entrepreneurstoolkit.org

Mukhtasor, 2015
Lessons Learned

- **Case Study**: Ocean Energy Development

- National context:
  
  In Indonesia, there has been no implementation scale of the ocean energy.
  
  In fact, there is significant shortage of electricity, particularly in Eastern Indonesia. On the other hand, ocean energy resources in Indonesia is very huge to be utilised.
  
  For such an implementation, therefore, a collaboration among government, university, and industry is necessary to be built.

Mukhtasor, 2015
Lessons Learned

- **Case Study:** *Ocean Energy Development*

Ocean energy at ITS was first introduced as an elective course for undergraduate students. Along with time, it evolved into final project topics for final year students, and became research themes for several projects. From this, then ITS involves in the national-wide...
TUCAK AKHIR - NO 091336

STUDI PEMILIHAN LOKASI PEMBANGKIT LISTRIK TENAGA GELOMBANG LAUT...BANGUNAN

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FAKULTAS TEKNOLOGI INSTITUT TEKNOLOGI NUSANTARA
MURAH, 2014

TUCAK AKHIR - NO 091336

ANALISIS RESPON GERAK AKIBAT GELOMBANG PADA PONTON PEMBANGKIT LISTRIK TENAGA GELOMBANG-SISTEM BANDUL

HASBI SAKHO
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JURUSAN TEKNIK KELAUTAN
Fakultas Teknik Kelautan
Institut Teknologi Nusantara
Surabaya 2012
Lessons Learned

- **Case Study:** *Ocean Energy Development*

Vortex Induced Vibration Converter Tidal Current Turbine

*Laboratory of Marine Energy and the Environment, ITS*

Mukhtasor, 2015
Lessons Learned

- **Case Study:** Marine Energy Development

  Wave Energy Converter, Pendulum Systems
  A Collaboration of ITS, BPPT, PLN, Pertamina HE, & RISTEK
  Stage: Field test

  Mukhtasor, 2015
Lesson Learned: "Achievement"

- Establishment of Indonesian Ocean Energy Association INOCEAN (2011)
- Dissemination of ocean energy issues (2011-2012)
- Finalising roadmap draft on ocean energy regulation (2013)
- Determination of Resource Assessment Methodology (2013)
- Survey and Resource Assessment
- Ratification of Marine Energy Potential (current, wave, thermal) (2011 & 2014)
- Commitment and Budgeting of 1 MW of Ocean Current Energy Pilot Project
- Commitment and Budgeting of 10 MW of Ocean Thermal Energy Pilot Project
- Establishment of Post Graduate Program in Ocean Energy Engineering & Management
- Towards Establishment of South East Asia Marine Energy Centre (SEAMEC) (2015-2017)
- Mukhtasor, 2015
Resource Assessment and Site Selection
Peta Nasional Energi Laut Diresmikan

UNTUK pertama kalinya di Indonesia, Peta Potensi Energi Laut Nasional diresmikan penggunaannya. Potensi energi laut tersebut terdiri dari energi arus laut, energi gelombang laut, dan energi panas laut.

“Saya optimistis dengan diresmikannya peta potensi ini. Indonesia memiliki satu basis data yang sama secara nasional sebagai pedoman pengembangan energi laut sebagaimana diamanatkan Undang-Undang Energi Nomor 30/2007,” kata Wakil Menteri ESDM Susilo Siswoutomo, di Institut Teknologi Sepuluh November (ITS) Surabaya, kemarin.

Klasifikasi potensi energi laut dikelompokkan menjadi tiga jenis, yaitu potensi teoretis, potensi teknis, dan potensi praktis. Anggota Dewan Energi Nasional (DEN) yang sekaligus sebagai Ketua Asosiasi Energi Laut Indonesia (Aseli) dan Guru Besar ITS Prof Dr Mukhtasor menjelaskan peta potensi energi laut yang diresmikan pemerintah pada 2014 ini ialah hasil pemutakhiran data dari eksplorasi energi laut yang sebelumnya telah diratifikasi Aseli pada 2011. (RO/E-4)

Ocean Thermal Energy Reserves, 2014
Lessons Learned: “Network Development and Collaboration”

- **Case Study: Ocean Energy Development**

East Lombok Regency
Lessons Learned:

"Post Graduate, Sandwich Programme"

National Competence and Qualification

Post Graduate Program
Marine Energy Engineering and Management

Solving Problems in the Region

Students

International Education Culture

Mukhtasor, 2015
A Proposal Marine Energy Techno Park - A call for collaboration

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Closure

Come on....let us develop a collaboration.

Tank you very much

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