Mapping Innovation Across APEC

Purpose: Information
Submitted by: Indonesia
MAPPING INNOVATION ACROSS APEC

INNOVATION APEC

Mapping Qualifications Frameworks across APEC Economies

BY: INDONESIA
The contributions of Paul Romer and William Nordhaus are methodological, providing us with fundamental insights into the causes and consequences of technological innovation and climate change.
1. Romer demonstrates how **knowledge** can function as a **driver** of long-term economic growth.

2. **innovation** as the **PRIMARY DRIVER** of economic growth,

3. Paul Romer demonstrating how economic forces govern the willingness of firms to produce new ideas and **INNOVATIONS**.
Graph 8: Clusterization of countries by technology \((A)\), plotted by output per capita \((Y)\).

Data source: Appendix 5
Release of the Global Innovation Index (GII) 2018
Energizing the World with Innovation
LEADERS IN INNOVATION

GLOBAL INNOVATION INDEX 2018

ranks the innovation performance of nearly 130 countries. Each country is scored according to 80 indicators.

Global Leaders

1. SWITZERLAND
2. NETHERLANDS
3. SWEDEN
4. UNITED KINGDOM
5. SINGAPORE

Regional Leaders

Northern America
1. UNITED STATES OF AMERICA
2. CANADA

Latin America and the Caribbean
1. CHILE
2. COSTA RICA
3. MEXICO

Europe
1. SWITZERLAND
2. NETHERLANDS
3. SWEDEN

Central and Southern Asia
1. INDIA
2. IRAN, ISLAMIC REPUBLIC OF
3. KAZAKHSTAN

Northern Africa and Western Asia
1. ISRAEL
2. CYPRUS
3. UNITED ARAB EMIRATES

South East Asia and Oceania
1. SINGAPORE
2. KOREA, REPUBLIC OF
3. JAPAN

Sub-Saharan Africa
Innovation = Invention * Commercialization

EDWARD ROBERTS

David Sarnoff Professor of Management of Technology
Professor, Technological Innovation, Entrepreneurship, and Strategic Management
Founder and Chair, Martin Trust Center for MIT Entrepreneurship
Faculty Director, Martin Trust Center for MIT Entrepreneurship
Academic Area
Behavioral and Policy Sciences
Academic Groups
Technological Innovation, Entrepreneurship, and Strategic Management
Centers & Initiatives
Martin Trust Center for MIT Entrepreneurship
<table>
<thead>
<tr>
<th>No.</th>
<th>Product</th>
<th>Inventor</th>
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<tbody>
<tr>
<td>1</td>
<td>Organic Chilli Chips</td>
<td>Ng Ima Are Wardayenne, M. Hjumplj</td>
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<tr>
<td>2</td>
<td>Formulated Green Powd.</td>
<td>Dr. I. Edding K. Harim, M.S.</td>
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<tr>
<td>3</td>
<td>Corrugated Beads</td>
<td>Ir. Heri Susanto, Tjuprijono, M.T.</td>
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<td>4</td>
<td>Food Packaging Technology of</td>
<td>Evi Lita Raya, N.H., SPI., M.S.</td>
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<td></td>
<td>Traditional Food (Empu Gentong)</td>
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<tr>
<td>5</td>
<td>Rawkend Tea</td>
<td>Dr. Evih Shuroi</td>
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<td>6</td>
<td>Sawaiest Tea</td>
<td>Dr. Evih Shuroi</td>
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<td>7</td>
<td>Brotel Tea</td>
<td>Dr. Evih Shuroi</td>
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<td>8</td>
<td>BF-Mix</td>
<td>Dr. Ali Karl, M. S.</td>
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<tr>
<td>9</td>
<td>INOVA (Indomol for Cocos Beana</td>
<td>Dr. Fajarroet</td>
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<td></td>
<td>Fertamentations)</td>
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<td>10</td>
<td>Craft Chocolate Processing</td>
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<td>Machine and Formulation for</td>
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<td>(inal Medium Enterprises (IME)</td>
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<td>11</td>
<td>Gemboong Green Tea Powder</td>
<td>Dr. Dedi Rhandi</td>
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<td>12</td>
<td>Non-Wheat Noodle</td>
<td>Emy Robi, S.S., M.S.</td>
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<td>13</td>
<td>&quot;FR1&quot; Pineapple Variety</td>
<td>Dr. Anung Maharajaya, S.P., M.S.</td>
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<td>Standard Paints NAVAchrom</td>
<td>Naihna Purnomo Sari, S.D., M.P.</td>
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<td>15</td>
<td>Emiko</td>
<td>Rini Nafrirotu Naga</td>
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<td>16</td>
<td>Palm Oil Based Foaming Agent</td>
<td>Dr. Mira Khita</td>
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**INNOVATION = INVENTION X COMMERCIALIZATION**

- **41 PRODUCTS INDONESIA INNOVATION**

<table>
<thead>
<tr>
<th>No.</th>
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<td>26</td>
<td>Balik with Angled Background</td>
<td>Istranah Nurul Ekson, ST., M.B.</td>
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<td>Advanced Material</td>
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<td>27</td>
<td>Traumatic implant Producs Made</td>
<td>Dr. P. Nyoman Jafur, M.B.</td>
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<td>Of The Still Lfe Steel 3/16</td>
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<td>28</td>
<td>Regional Data Nodes (RDANS) for</td>
<td>Ayo An Wijaya, S.T., M.T.</td>
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<td>Monitoring The Earth In South</td>
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<td>East Asia</td>
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<td>29</td>
<td>XII pressure Experience 12:15</td>
<td>Dr. Rul Darmayanti</td>
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<td>30</td>
<td>AHOH</td>
<td>Dr. Rul Darmayanti</td>
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<td>31</td>
<td>BioOx Checker</td>
<td>Talia T. Pratowo, Dpt. Chem., Ph.D.</td>
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<tr>
<td>No.</td>
<td>COLLABORATION NAME</td>
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<thead>
<tr>
<th>No.</th>
<th>COLLABORATION NAME</th>
<th>PRODUCT</th>
<th>LEVEL</th>
<th>ACTIVITY</th>
<th>MAC &amp; YEAR</th>
<th>INSTITUTIONS</th>
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<tbody>
<tr>
<td>5</td>
<td>2. Joint Development of Regional Data Node in The Semantic Data Related Services</td>
<td>Regional Data Node</td>
<td>Level 5</td>
<td>2. Website development, website data distribution and managing using PWZICD international distribution scheme, website data services and managing sharing, transmission, and monitoring services of subsistence area and small</td>
<td>Oct 8, 2018</td>
<td>1. Center for Remote Sensing, Japan Trade Technology - National Institute of Information and Space Technology</td>
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<td>6</td>
<td>3. Developing collaborative research on technology of food production from healthy plant</td>
<td>Healthy Plant</td>
<td>Level 5</td>
<td>3. Collaborative research and publication on technology of food production from healthy plants, 4. Technology development for mushroom based food and vegetable.</td>
<td>Oct 7, 2018</td>
<td>1. Research Institute (Batik)</td>
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</tbody>
</table>

**INDONESIA ID 2018 - LIST OF POTENTIAL COLLABORATION JAPAN AND INDONESIA**
INNOVATION = INVENTION X COMMERCIALIZATION
PROMOTING APEC INNOVATIVE START-UPS

Ho Chi Minh City, Viet Nam, 15 September 2017
The importance of APEC start-ups to regional quality growth and innovative development

APEC has grown to become a dynamic driving force of regional economic growth and integration. Meanwhile, micro, small and medium-sized enterprises (MSMEs) are a significant source of prosperity and employment, and a major contributor to innovation and the engine of economic growth in the Asia-Pacific region. Recognizing the intensification of innovation-based economic cooperation, APEC has taken the lead in improving the competitiveness and innovation of MSMEs in the region since its early development.
The top 50 technologies driving global innovation and commercial growth

- Therapeutic Antibodies
- Next Gen Stem Cell
- Cancer Screening
- Biosimilars
- 3D Scaffolds
- Molecular Scissors

Health and Wellness
- Information & Communication Technologies
- Predictive Analytics
- 5G
- Cognitive Computing
- Software-defined Anything

Energy and Utilities
- Lithium Batteries
- Home Energy Management
- Tight Oil Extraction
- Waste Heat Recovery
- Microgrid

Environment and Sustainability
- Waste-to-Energy
- Precision Agriculture
- Micro Irrigation
- Off-grid Desalination
- Wastewater Membrane Filtration

Advanced Manufacturing and Automation
- Additive Manufacturing
- Digital Manufacturing
- Collaborative Industrial Robots
- Agile Robots
- Robotic Exoskeletons

Chemicals and Advanced Materials
- Lightweight Materials
- Bio-based Materials
- Nanocoatings
- Graphene
- Self-healing Materials
- Smart Packaging

Medical Devices and Imaging
- Optical Coherence Tomography
- X-eluting Stents
- Nuclear Imaging
- Smart Pill

Microelectronics
- Wearables
- OLED Lighting
- SiC Electronics
- Transparent Electronics
- Rapid Charging

Sensors and Instrumentation
- Commercial Drones
- Biosensors
- Terahertz Sensing
- Next Gen RTLS
- Smart Haptics
CONCLUSIONS

By focusing on innovation, cooperation among APEC countries can help solve joint problems, and share knowledge and best practices.

At the national level, cooperation among APEC Countries can support and reinforce national efforts for innovation and also enrich perspectives on best practices and lessons learnt in other countries.