

# Industry and Academia Relations in Developing Economies

The Egypt-Japan University of Science and Technology  
Experience:

Industry Perspective

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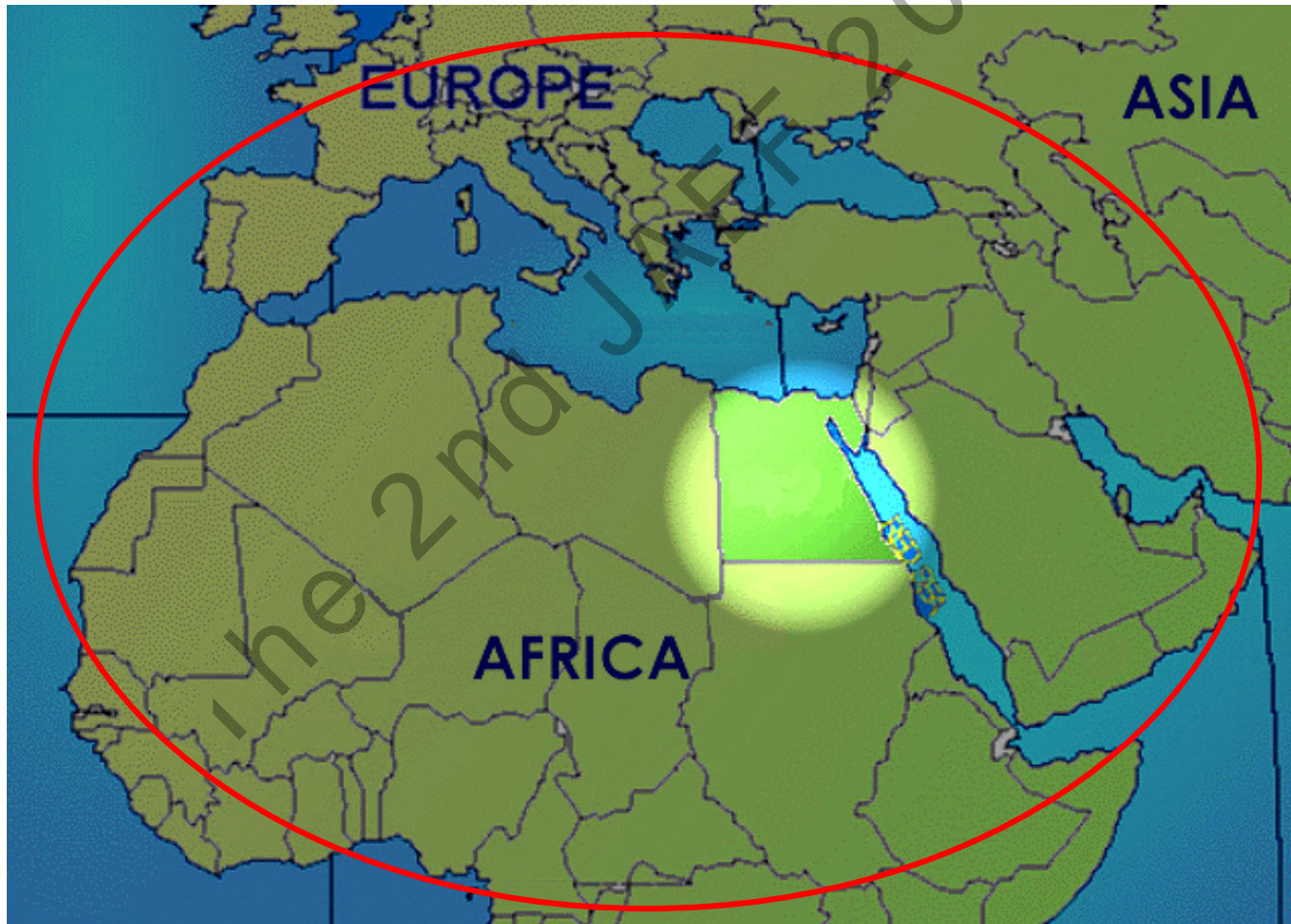
Founding Member and Industry Representative

# Background and Foundation

Part I

The 2nd JALEF 2011

# EJUST: A hub between 3 Continents



# E-JUST is first University in Partnership between 2 Governments

- E-JUST is a Special Status, Government supported University
- Established according to the Bilateral Agreement signed between Egypt and Japan, and Ratified by Presidential Decree 149 of 2009.
- E-JUST's governance is based on Japanese best practices in Education, Research, Science, and Technology.
- E-JUST aims at *financial sustainability* through engagement of various stakeholders

# E-JUST Stakeholders

- Egyptian Government
- Japanese Government: JICA, MEXT, and Others
- Japanese Consortium of Supporting Universities [JSUC] *12 Leading Universities*
- Civil Society
  - Egyptian and Japanese Industry
  - Egyptian and Japanese Individuals and Organizations
  - MENA Governments and regional organizations

# Postulates [1]

- Economic growth is mainly driven by the ability of countries to harness the power of science and technology through *innovation*
- Growing the economy implies addressing the main factors that affect the competitiveness of industry in the context of the various phases of *economic development*
- Innovation is more likely to come from SME's rather than large corporations.
- Innovation grows out of rivalry, pressure, and challenges

# Postulates [2]

- **Economically viable *national* projects are crucial in fostering innovations through cooperation between Academia and Industry in developing economies. [*Crucial role of the Higher councils of Science and Technology*]**
- **Government policies need to provide *incentives* for business funding of academic research**
- **Government funds are essential to bridge the gap between proof of concept and early stage research financing (*Bridging the “Valley of Death”*)**

# Postulates [3]

- **Research grants are attractive to industry because they do not dissolve *equity*.**
- **Grants for early stage can be used to leverage commercial funds**
- **The motivations for industry and academia to conduct research are quite different: Common grounds must be endorsed.**



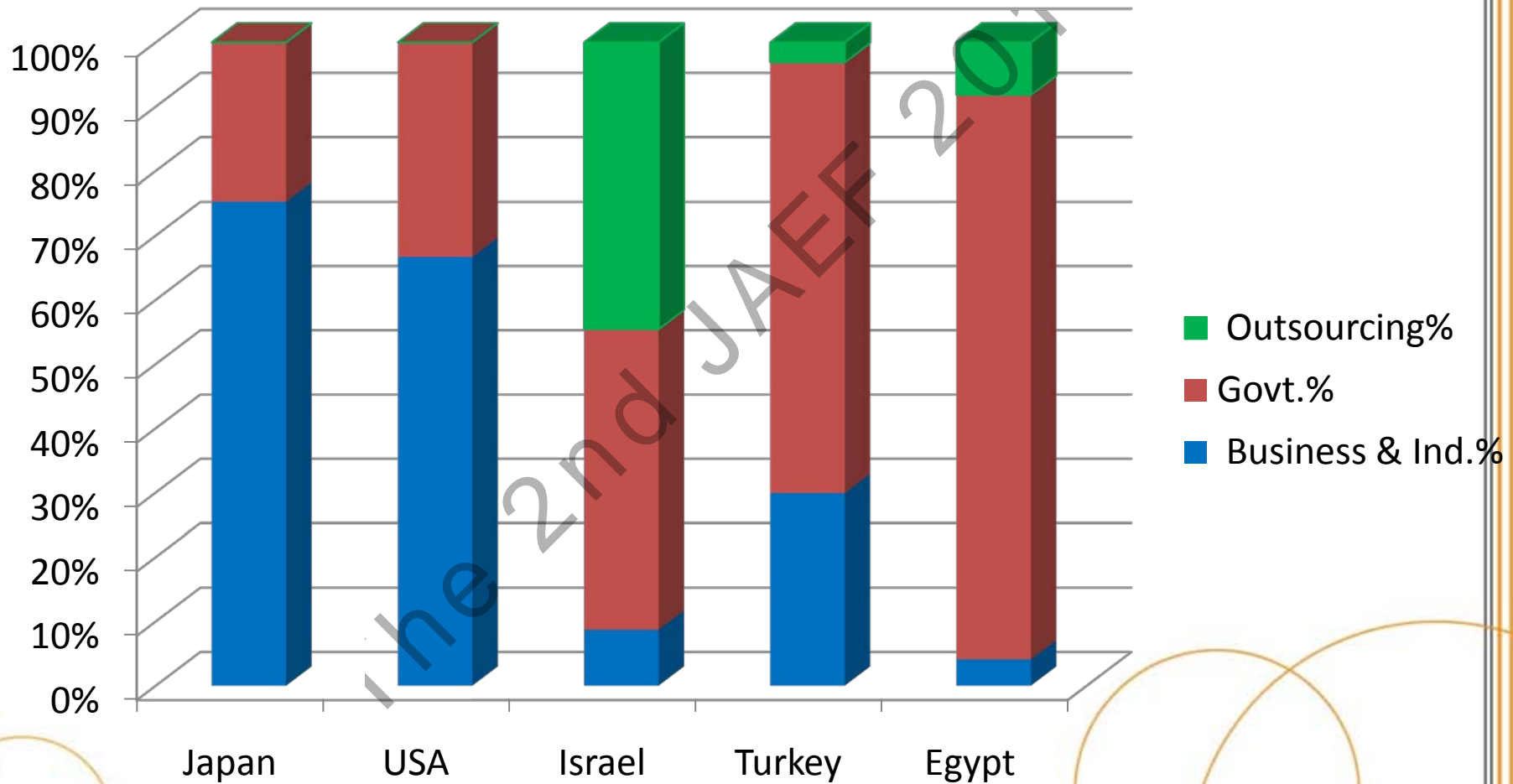
# Postulates [4]

- **IPR issues related to Joint inventions must be well addressed: Disclosure of proprietary knowledge is an industry concern, but essential in academia**
- **Legal and legislative issues can be a serious obstacle in Academia-Business dynamics**
- **Venture Capital in most developing economies is still a myth...**

# Industry's Contribution to Research

Facts and Figures

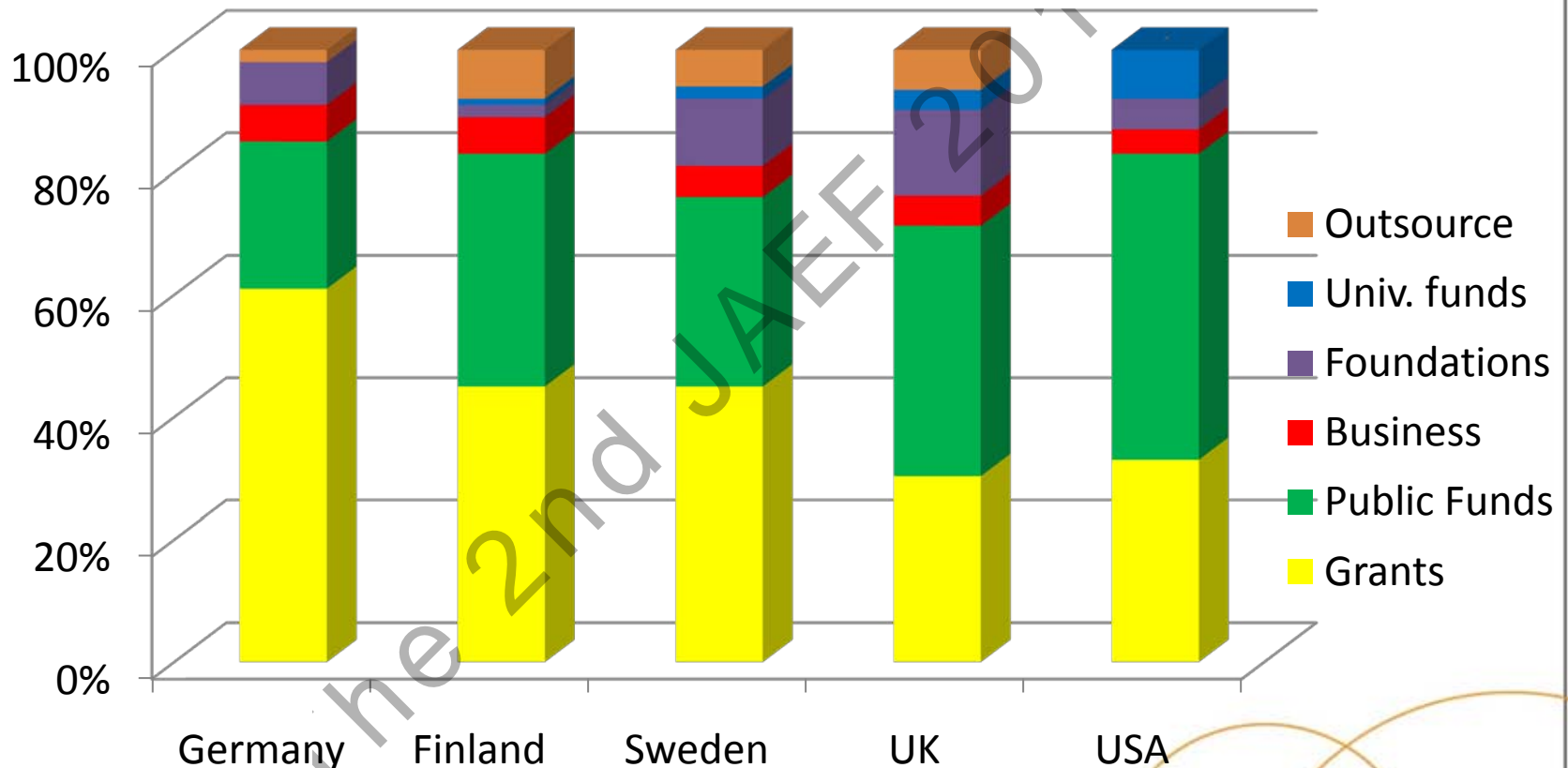
# GERD Sources of Research Funding



# Industry's Contribution to Academic Research

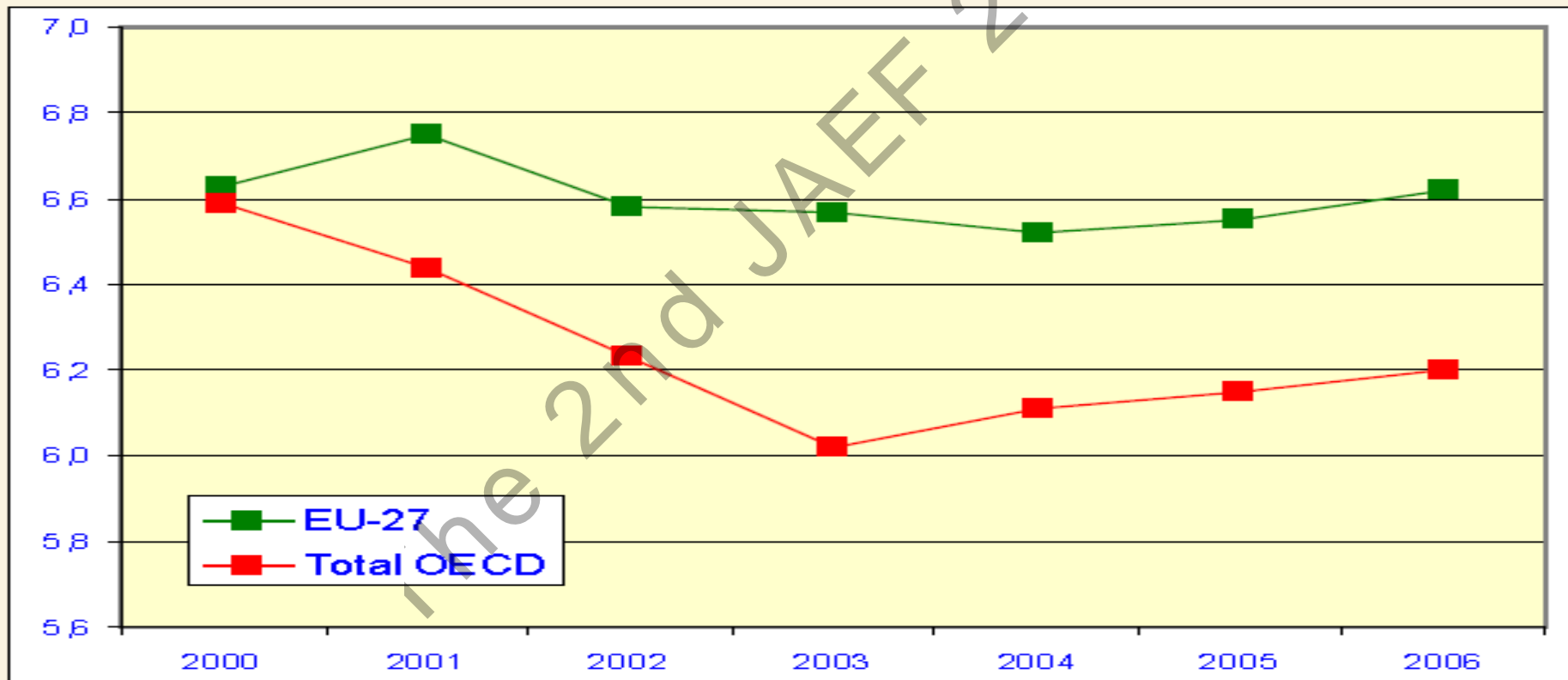
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# Industry Contribution to Academic Research



# Industry Contribution to Academic Research

## Percentage of Higher Education R&D financed by industry



Robert J.W. Tijssen Center for Science and Technology Studies (CWTS) Leiden University, The Netherlands IREG 5 Conference, Berlin, 6-8 October 2010

Japan – Arab Economic Forum

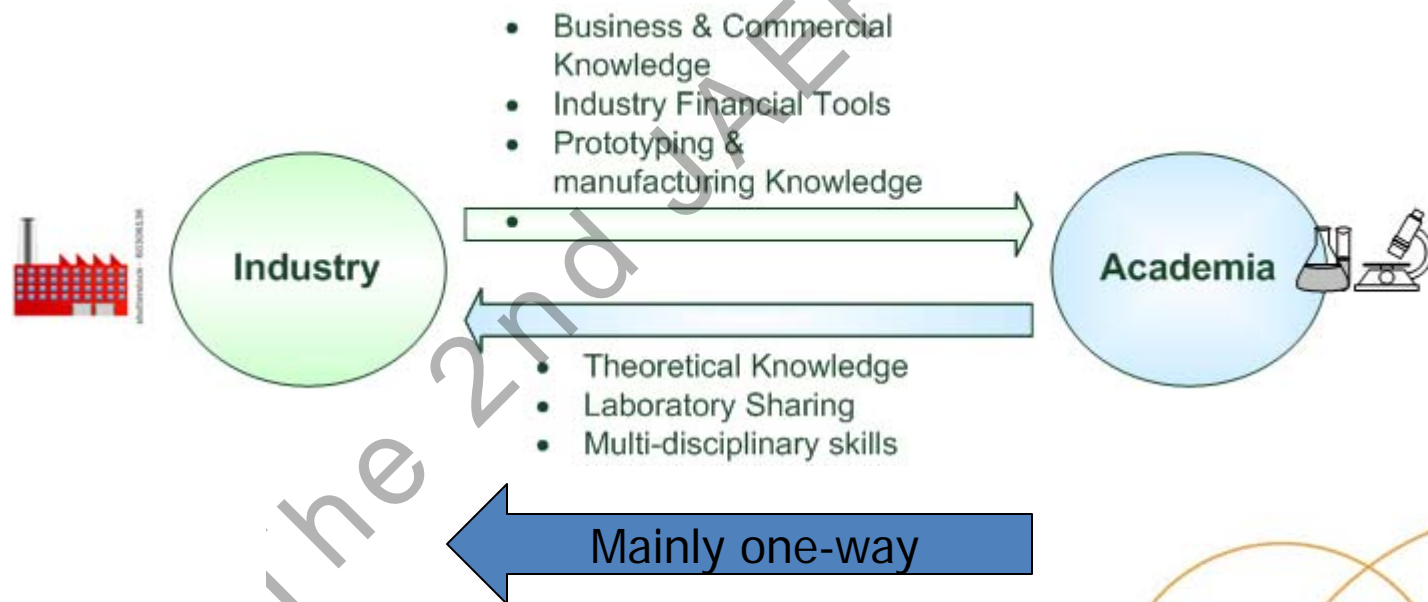
# Industry- Academia Relation

Simple Bilateral Relation

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# Classic Paradigm

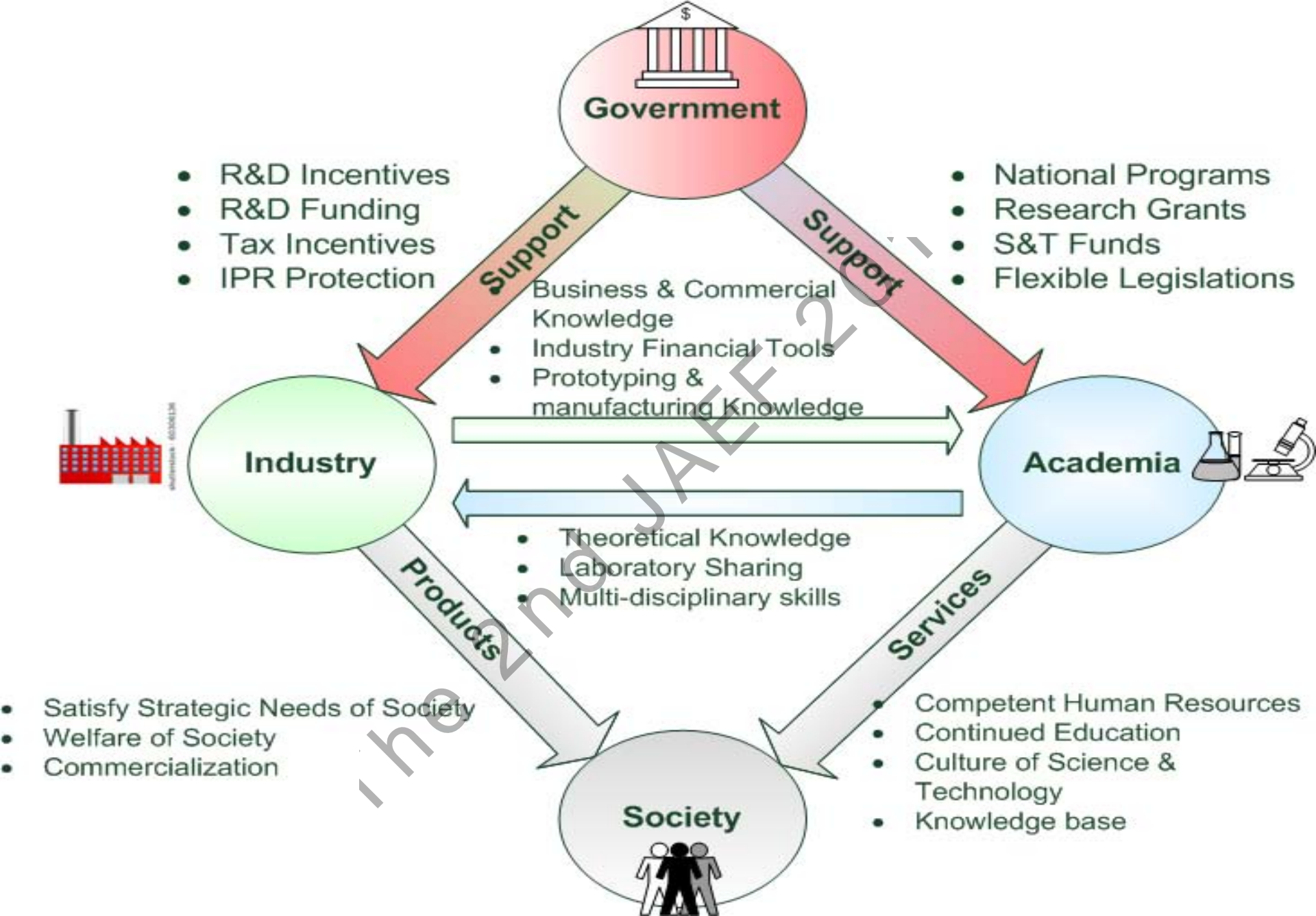
- Consultations: Mainly one-way





# Industry-Academia Relations

The Extended Paradigm



# Who are the Stakeholders?

- **Government** [*Instigator and Catalyst*]
- **Industry** [*Principal delivery tool*]
- **Academia/ Research Institutes** [*Core Driver*]
- **Society** [*for sustainability: Ultimate Beneficiary*]

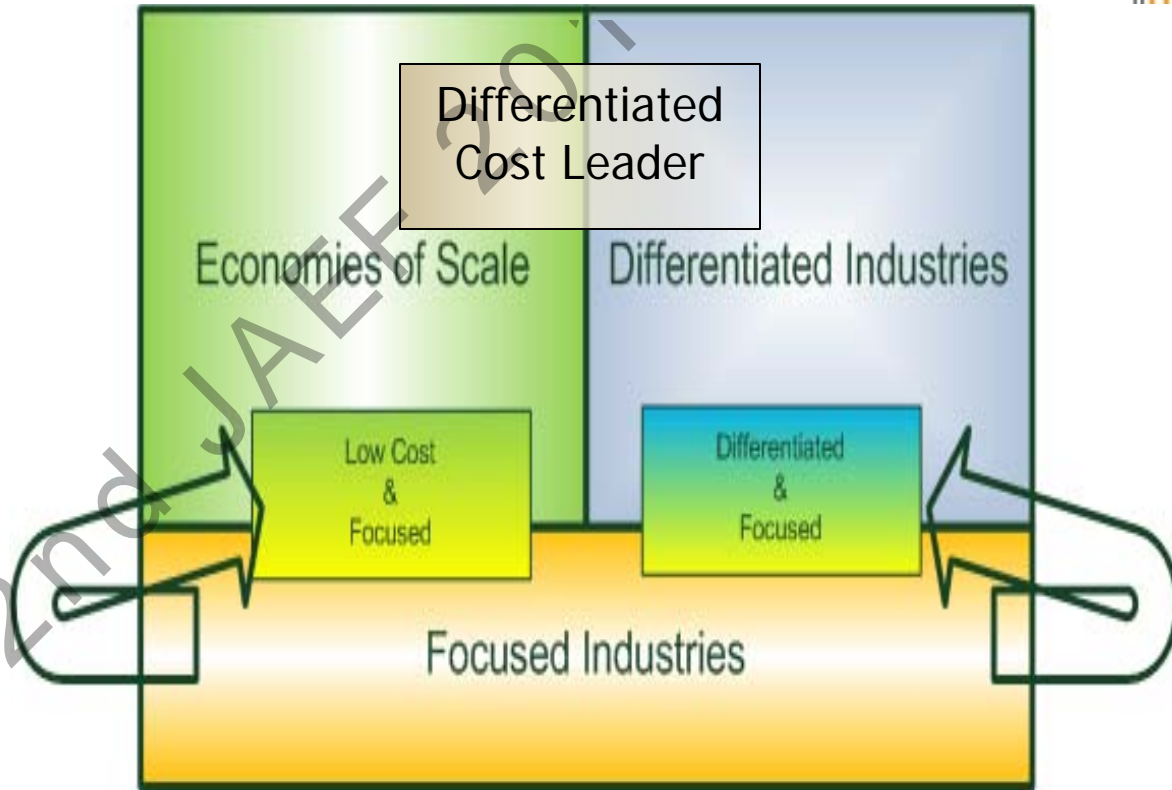
# Generic Classification of Industry

Is Industry Homogeneous?

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# Generic Classification of Industry [Porter]

- **Cost Leaders**
- **Differentiated**
- **Focused (niche markets)**
- **Focused cost leader**
- **Differentiated cost leader**



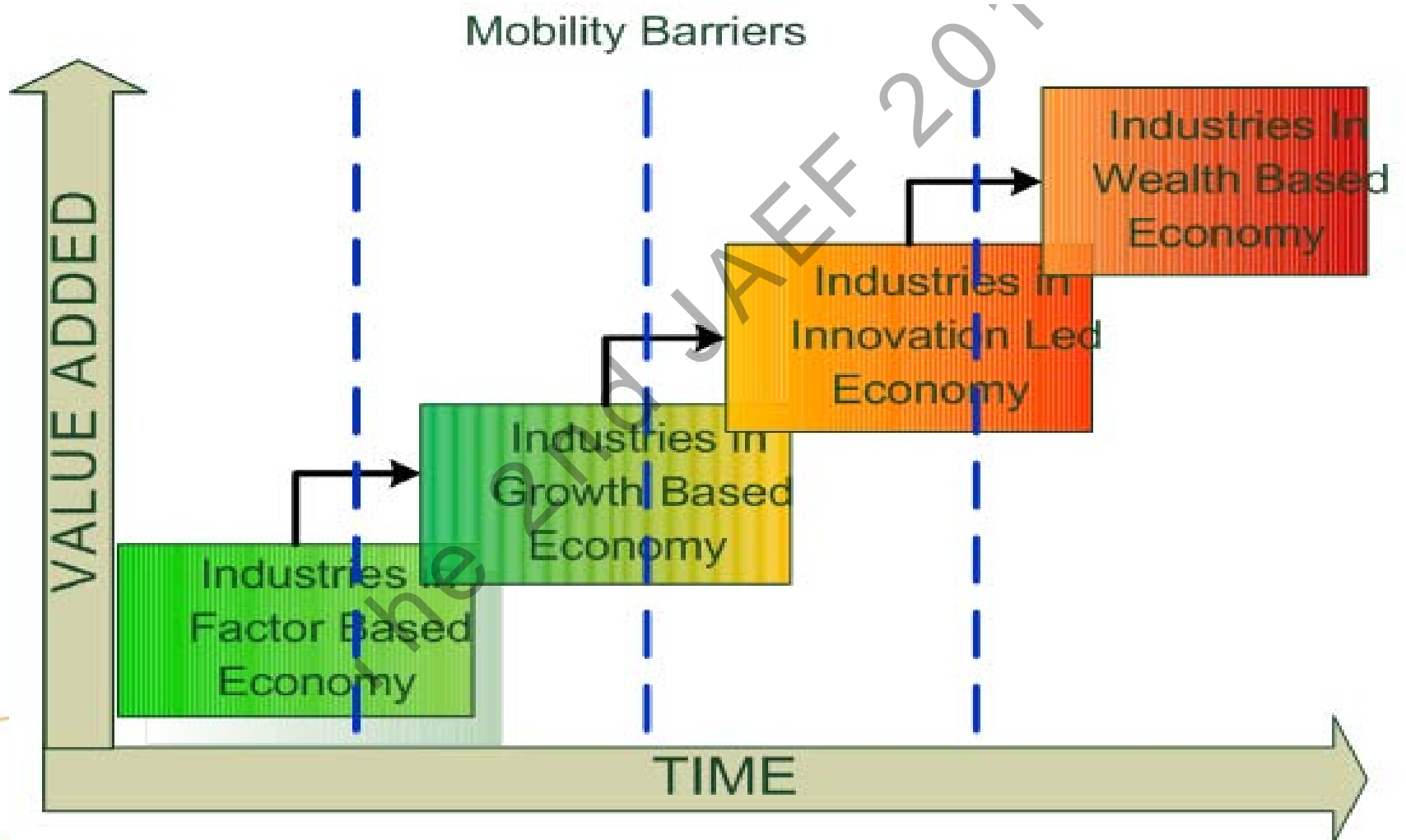
Porter Classification by Generic Strategy

Japan – Arab ECONOMIC FORUM

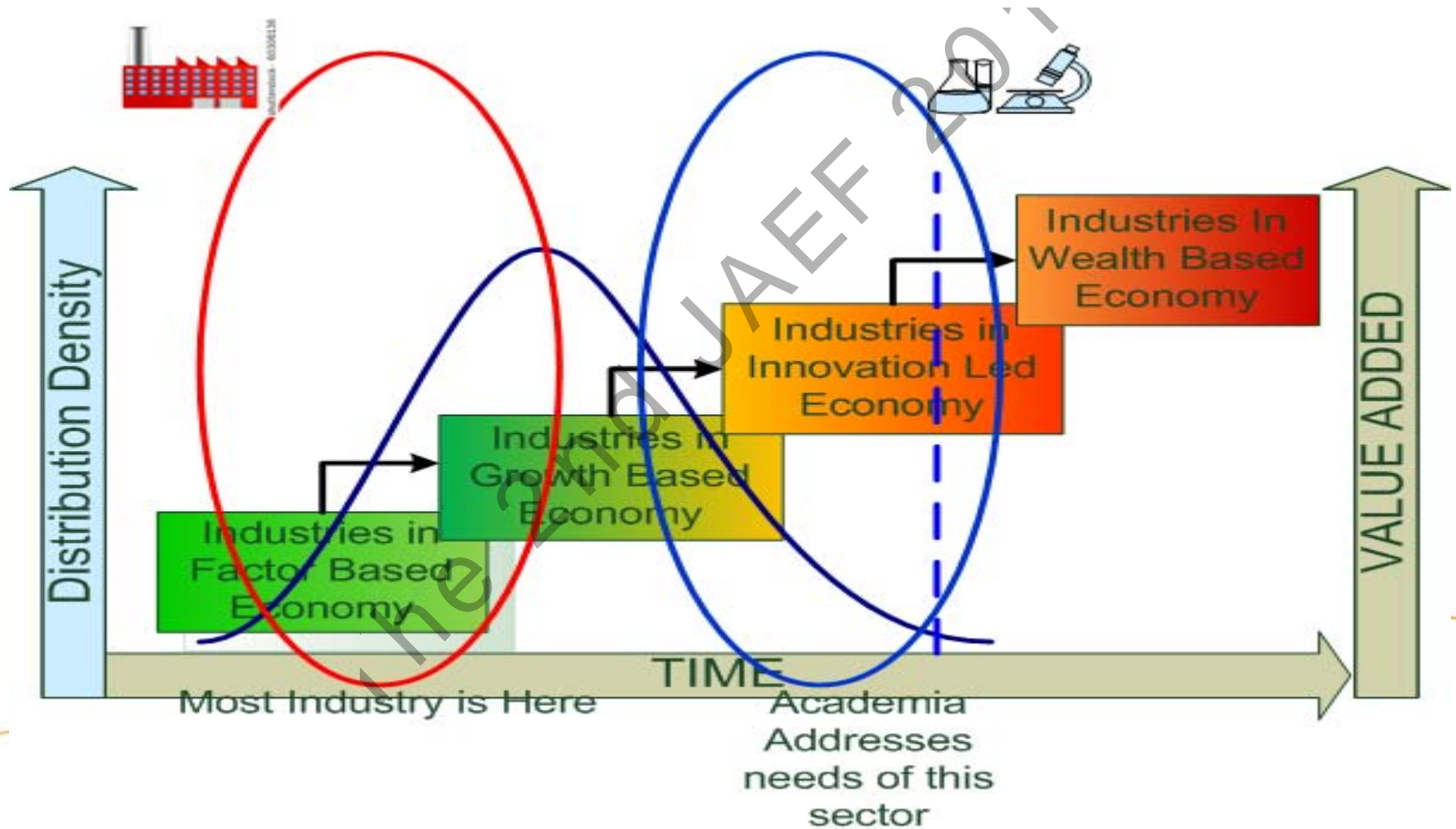
# The Bigger Picture

## Stages of Economic Development

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# The Divide



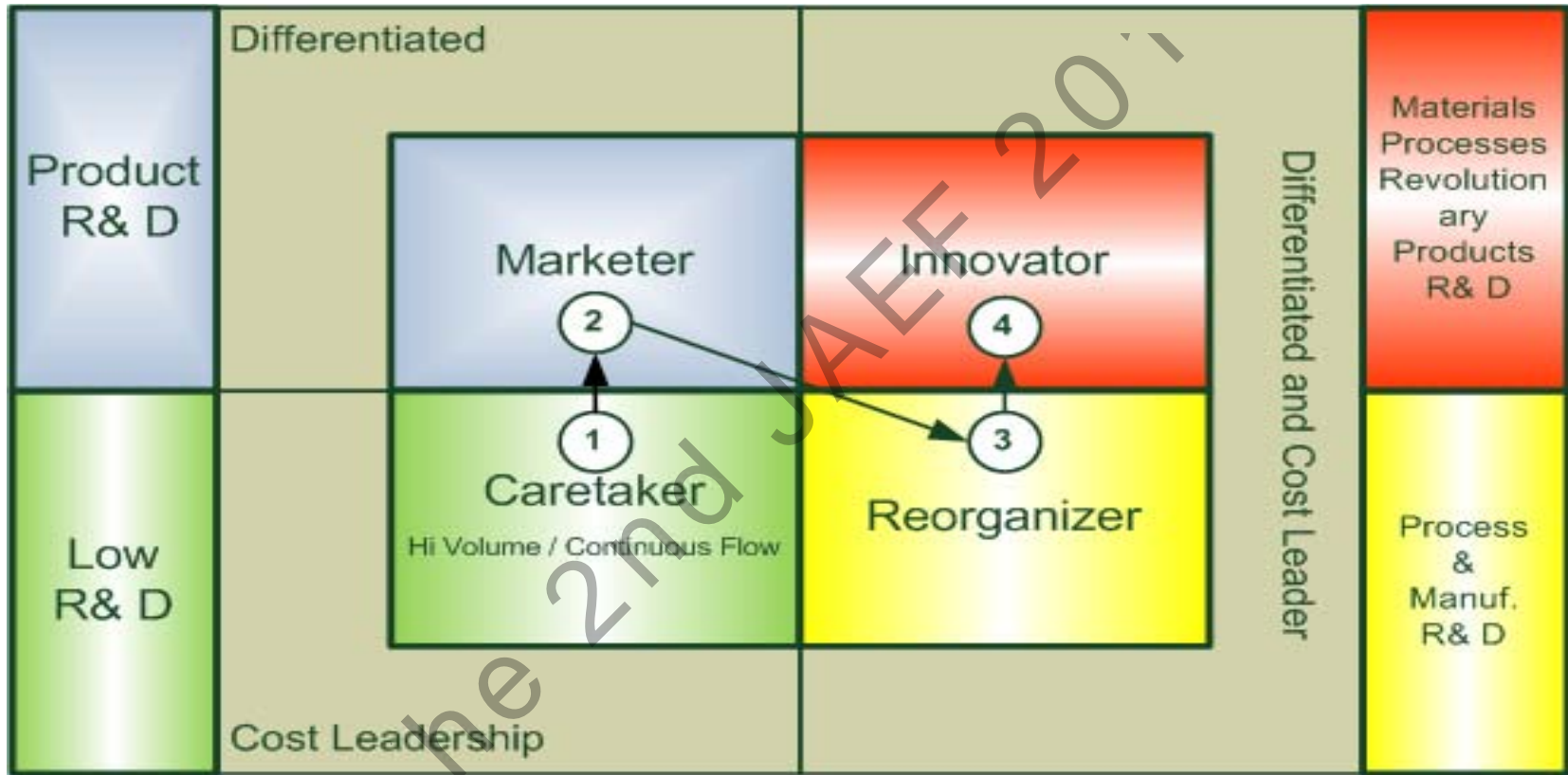


# Transitioning

Growth, Innovation, Competitiveness and  
Sustainability

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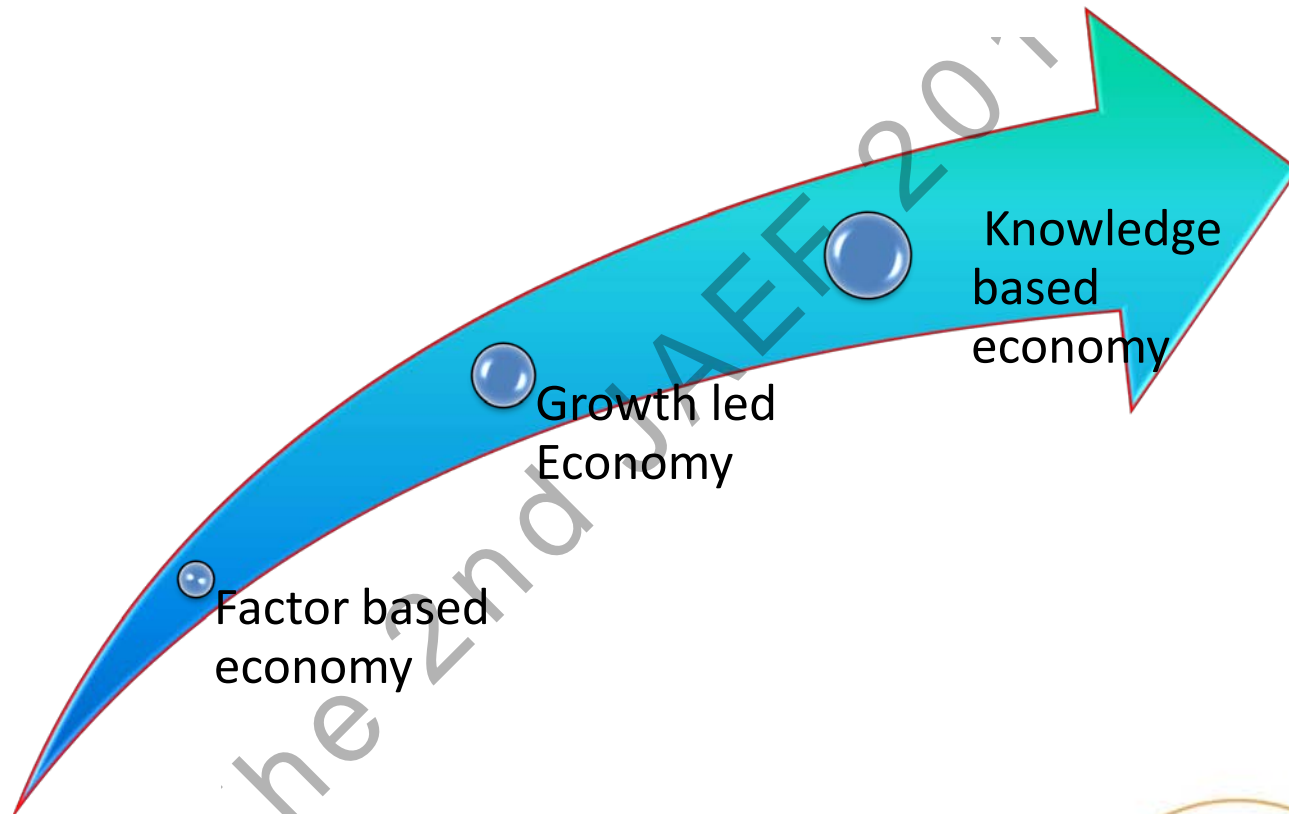
# Industry Transitions



Transition from 2 to 3 Thru Supply Chain

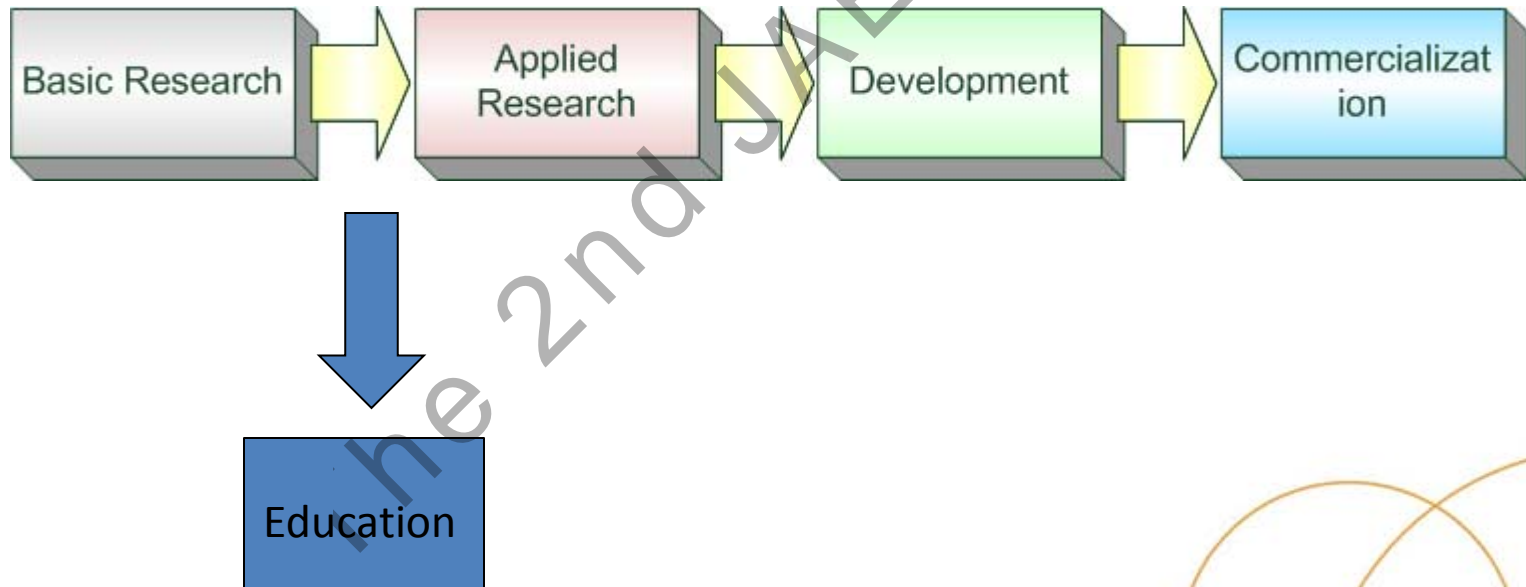
Japan - Arab Economic Forum

# Industry Transitions Lead To Economic Growth



# Classical Research Paradigm

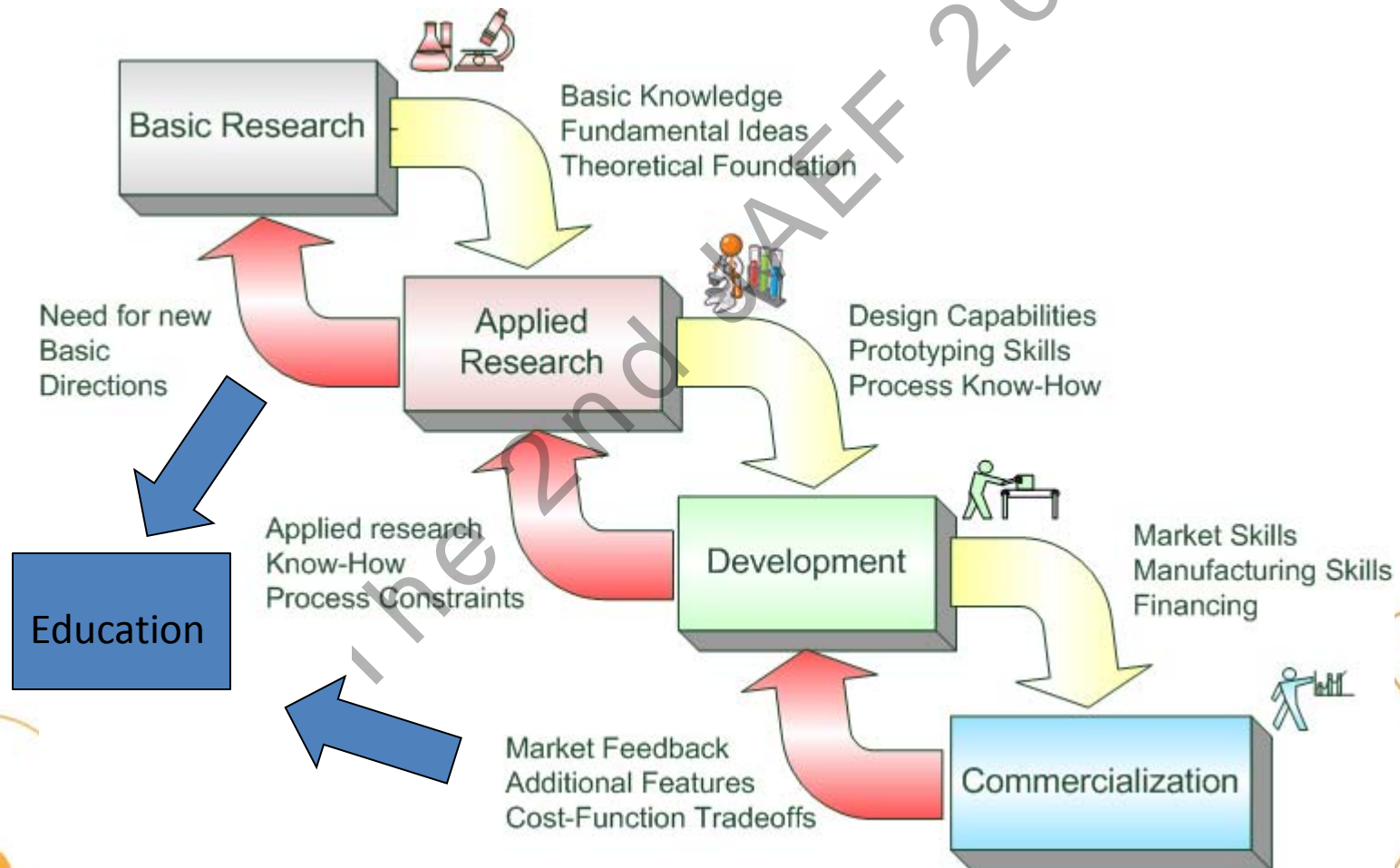
- Linear model of Research



# New paradigm

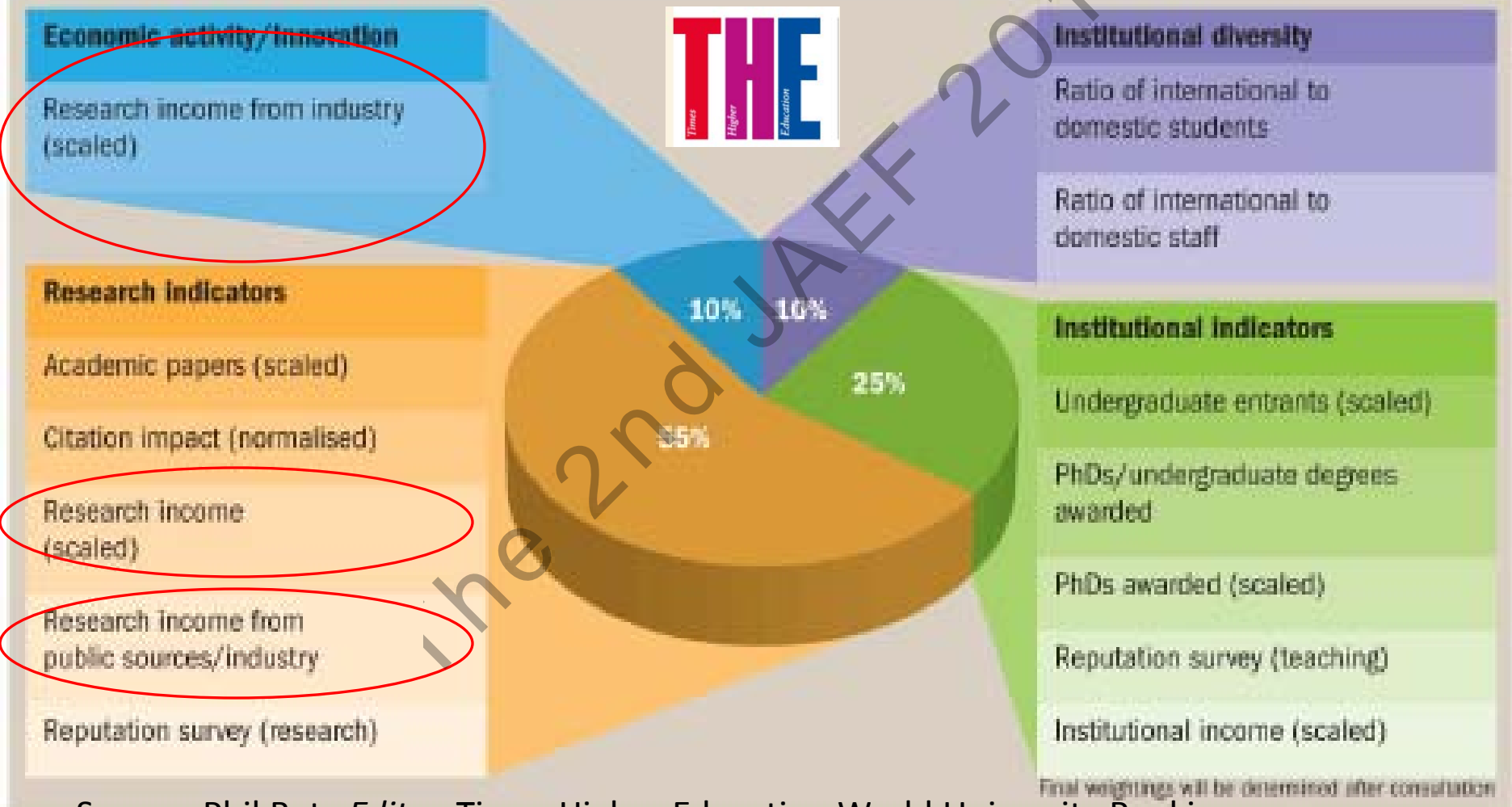
Adapted from Charles W. Wessner :Converting Res. Into Innovation & growth

- Iterative Model



# TIMES Proposed New Ranking System

## THE PROPOSED NEW RANKINGS METHODOLOGY



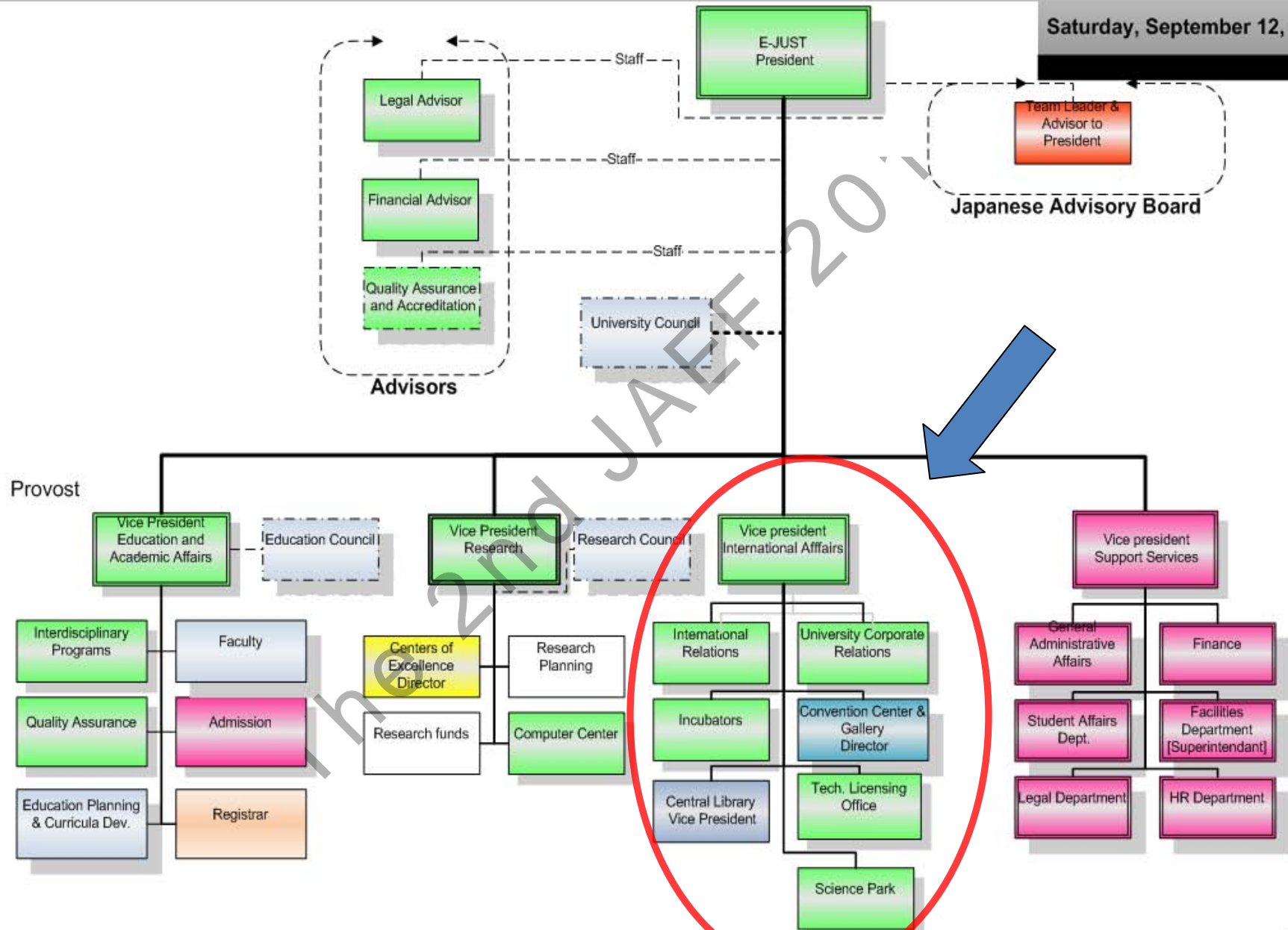
Source: Phil Baty *Editor*, Times Higher Education World University Rankings

# **A Business Model from Egypt: E-JUST**

**Organization Structure  
Dealing with Society: The E-JUST  
Foundation**

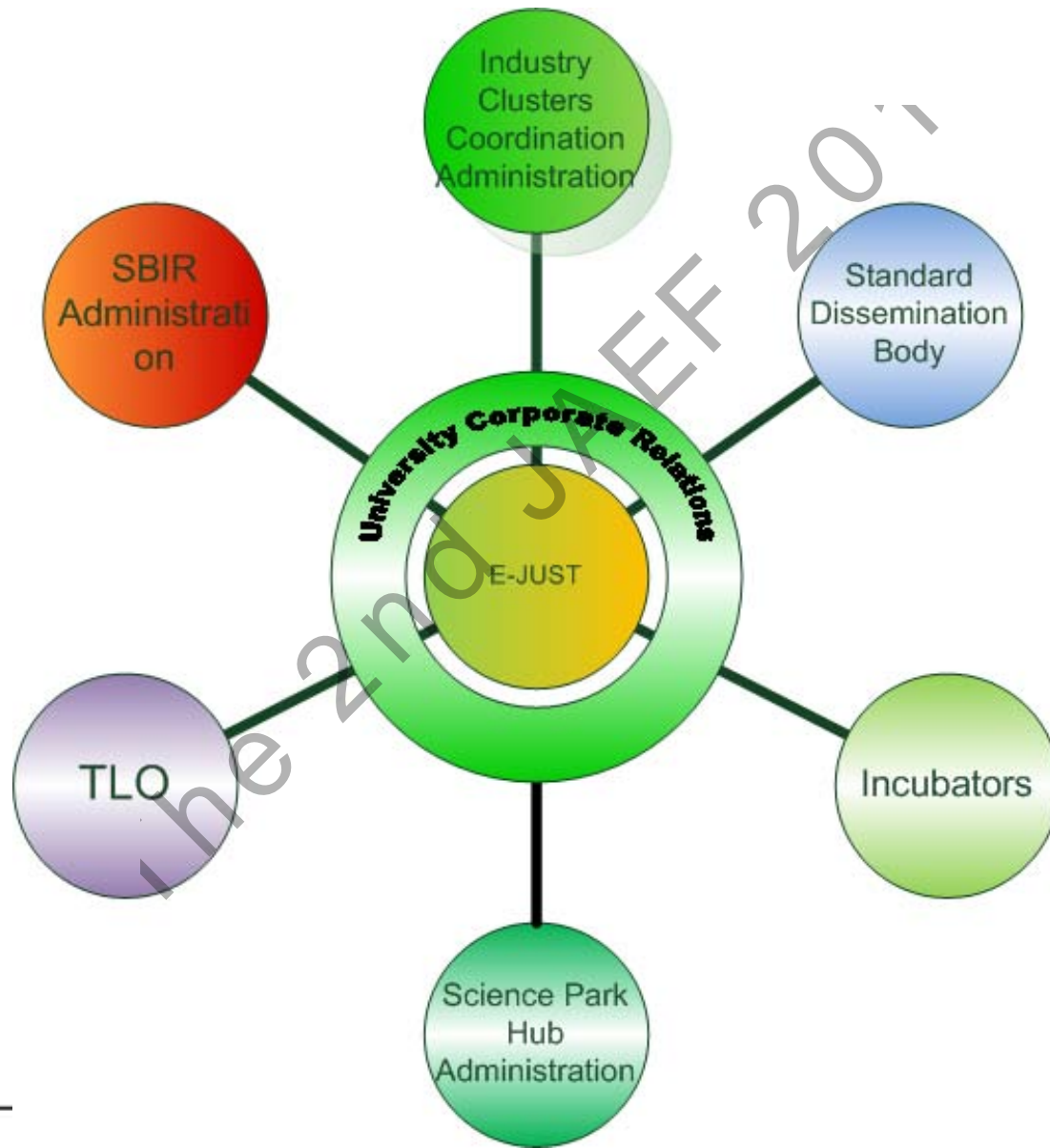
# E-JUST Organization Structure : Top Management 2 Nishimoto Model

Saturday, September 12, 2009

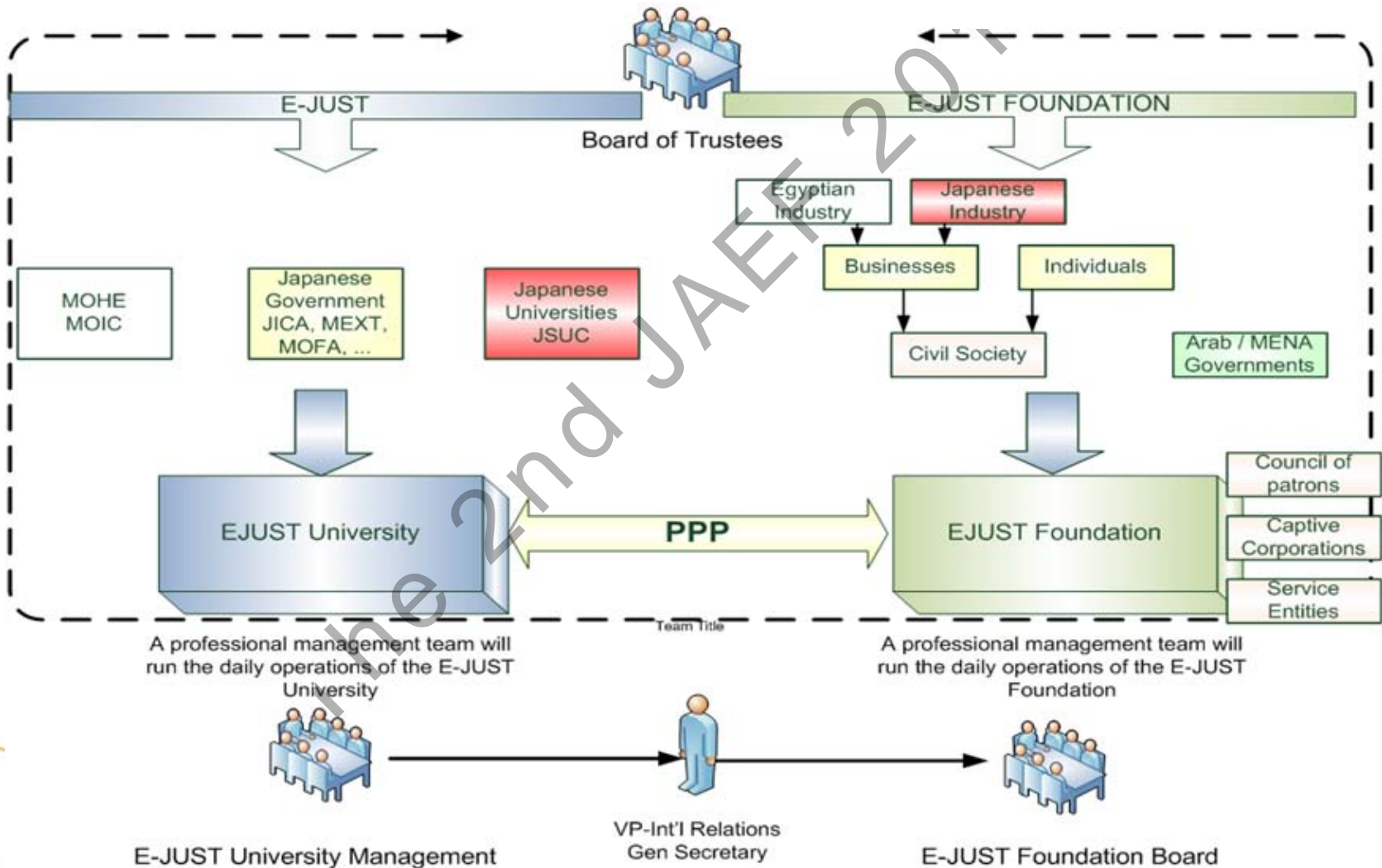




# University Corporate Relations



# Dealing with Civil Society



# Rationale for Establishing E-JUST Foundation

- Established as an NGO – Foundation under Egyptian law to serve E-JUST activities
- Not-for-profit organization accountable to the BOT
- Civil Society contributions will not be channeled to government
- Flexibility in pursuing financial and sustainable activities to the benefit of E-JUST
- Observes rules of public funds, is accountable, transparent, and secure

# E-JUST Foundation Mandate [1]

- Establish captive corporations and other business entities serving EJUST, and engage in activities that would generate suitable revenues for the University.
- Establish and support Science Parks and Technology Incubators to the benefit of E-JUST faculty, researchers and staff with active participation of Industry and businesses.
- Receiving funds, gifts, donations, and other contributions made by benefactors and various stakeholders, and establish and manage these funds
- Receive and manage trust funds and endowment funds.
- Own, supervise and manage service entities such as sports and recreation centers, student housing, commercial centers, etc...

# E-JUST Foundation Mandate [2]

- Sponsor and support events such as conventions, exhibitions, performances and similar activities for the benefit of E-JUST.
- Perform and deliver general training programs through E-JUST to the benefit of society.
- Encourage cross-cultural exchanges between Egypt and Japan
- Publish documents, newsletters, and other printed or electronic documents to support its activities.
- Form strategic alliances with similar entities worldwide that serve E-JUST.

# Fostering Industry-Academia Relationships

Suggestions

# Role of Government [1]

- Identify research priority areas as ***Societal needs***
- Institutionalize Funding programs for research
- Grants for early phase/ proof of concept finance of joint SME and Academia
- Increase spending on basic research: Universities with strong Basic research are more likely to cooperate successfully with industry

# Role of Government [2]

- Stimulate domestic markets as means of increasing rivalry / competitiveness
- Government incentives: tax breaks, grants, early stage funding
- Strengthen factors : Human resources, infrastructure, capital, trade and business associations...
- Create, Adopt, and Enforce Standards



# Industry [1]

- **Industry should defragment:**
  - Encourage Clustering
  - Lobby for systematic zone planning as Growth Poles
- **Encourage SME's to build capacities:**
  - Capital Equipment funding
  - Tax incentives,
  - HR development,
  - Forgiving bankruptcy legislations
- **Support the establishment of Standards Dissemination Bodies**

# Industry [2]

- **Invest in Human Resources: Profit from Government sponsored training programs**
- **Form strategic alliances with powerful foreign partners**
- **Active involvement in academia governance [ Advisory boards etc...]**
- **Support the establishment of Standards Dissemination Bodies**
- **Participate in Training programs of University students**

# Academia [1]

- **Facilitate creation of spinoff Companies and allow academics to have equity positions [reduce brain drain]**
- **Settle IPR issues early: Include University by-laws emulating [Bayh Dole Act] until suitable laws are passed**
- **Establish Universities entities with flexible Legal Status to address issues with civil society [University Foundations]**
- **Understand Industry development phases and their varying needs**
- **Avoid getting trapped in problems of fragmented industries**

# Academia [2]

- Encourage clustering by hosting Industry events
- Act as a hub to local Tech-park,
- Adapt to emerging paradigms of University ranking
- Look into PBL and Iterative research paradigms
- Establish special external relations administration
- Consider having a TLO to facilitate and foster Technology transfer and coordinate with other institutions, and coordinate with similar offices locally and internationally [TLO]
- Consider University's social responsibilities
- Invest in Alumni : They support their schools!



الجامعة المصرية اليابانية للعلوم والتكنولوجيا

**E-JUST**

Egypt - Japan University of Science and Technology

エジプト日本科学技術大学

*We will contact you soon for  
collaboration with E-JUST  
foundation*

[www.ejust.edu.eg](http://www.ejust.edu.eg)

Amir Wassef

**Egyptian**  
Research-Oriented University with  
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