

# A New Paradigm to help accelerate the Transformation of Resource Rich Nations into Sustainable Knowledge Economies

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# Introduction

- We discuss the Knowledge Economy and Innovation in the 21<sup>st</sup> Century
- Natural Resource Rich Economies, their current status and challenges
- Companion Direct Investment as an alternative paradigm
- Conclusions



# The Knowledge Economy and Innovation in the 21<sup>st</sup> Century

# Knowledge Based Economy (KBE)

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<b>Organization</b>	<b>Definition</b>
European Union (EU)	The term "knowledge economy" is commonly used to describe economic activity that relies not on "natural" resources (like land or minerals) but on intellectual resources such as know-how and expertise
OECD & Welsh Government	Economy which is characterised by the recognition of knowledge as a driver of productivity and economic growth, leading to a new focus on the role of information, technology and learning in economic performance
World Bank	A knowledge economy is one where organizations and people acquire, create, disseminate, and use knowledge more effectively for greater economic and social development

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# Knowledge Economy: A Global Context

*“...economies which are directly based on the production, distribution and use of knowledge and information”*

(OECD 1996)

## Key Supports

- **Economic and Institutional Regime:** Facilitating innovation
- **Human Capital:** Educated and skilled workers
- **Innovation:** An effective innovation system
- **Infrastructure:** Modern and adequate information infrastructure

(World Bank 1998)

# Knowledge Economy Index (KEI): The World Bank's Four Pillars

KEI

Economic and  
Institutional  
Regime

- Tariff & Nontariff Barriers
- Regulatory Quality
- Rule of Law

Education  
Index

- Average years of schooling
- Secondary Enrollment
- Tertiary Enrollment

Innovation  
Index

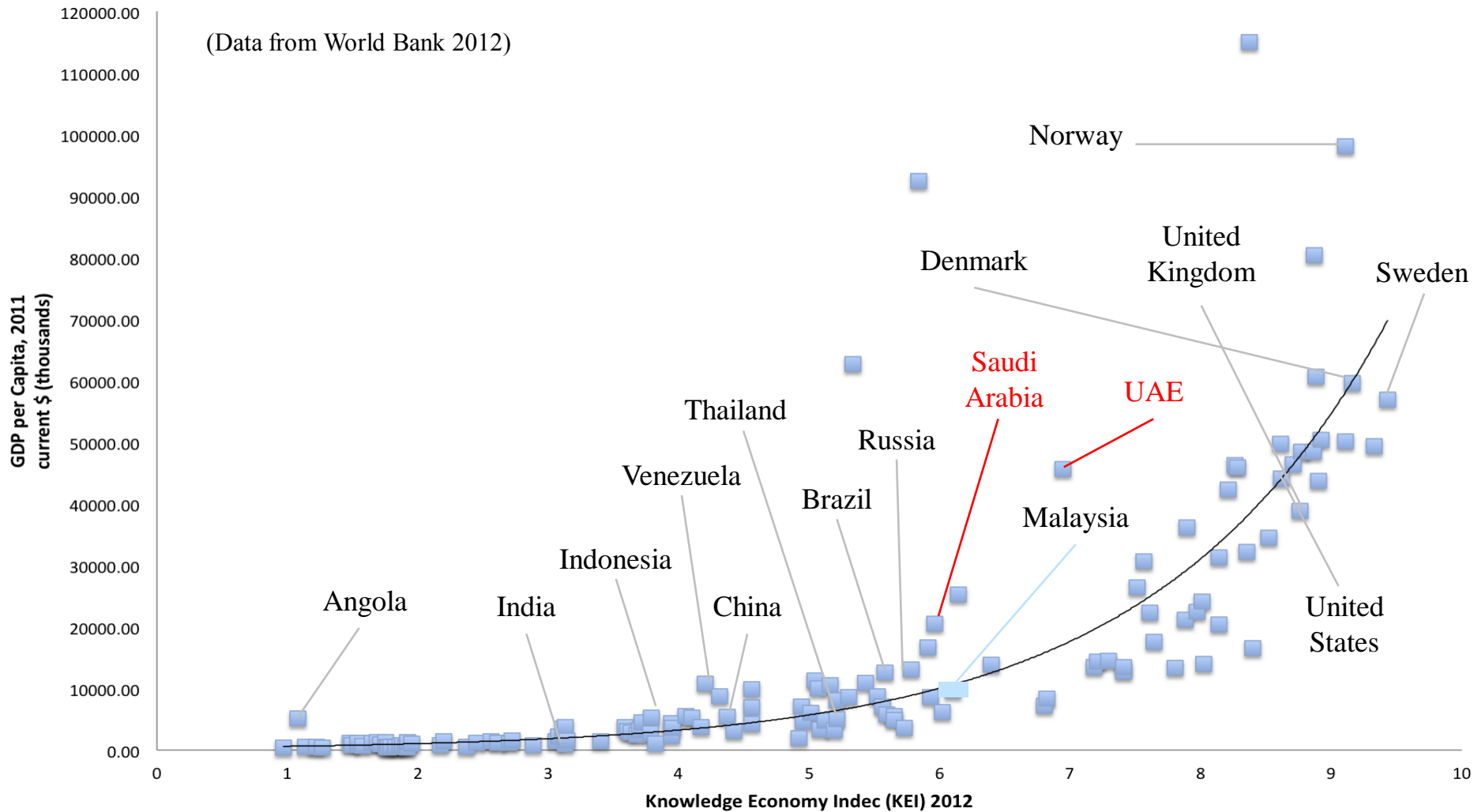
- Royalty Payments & Receipts
- Patent Count
- Journal Articles

ICT Index

- Telephones
- Computers
- Internet Users

# KBE Benefits : GDP / KEI

(Data from World Bank 2012)



# KBE Pillars

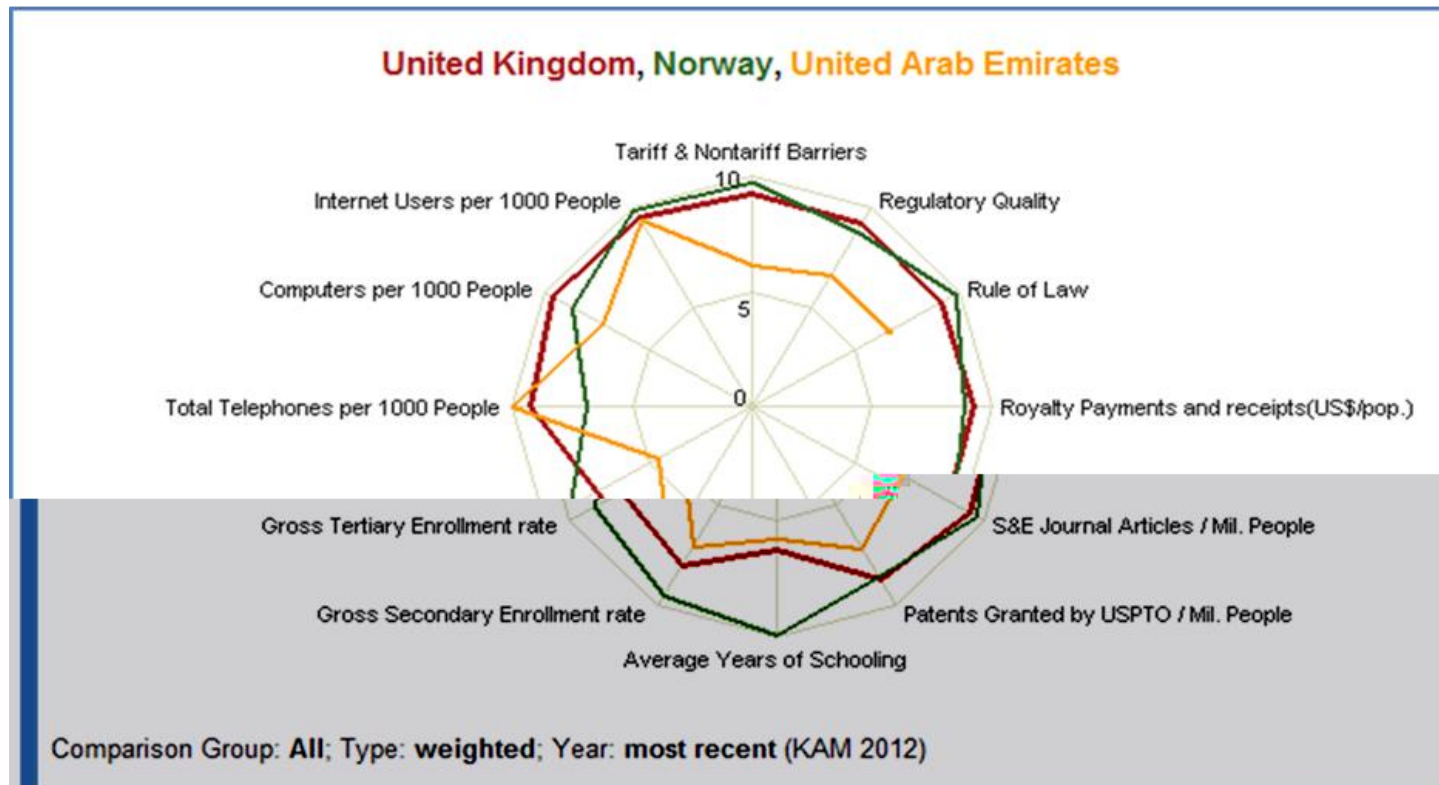
Country	2012 Rank	KEI	Four World Bank Pillars			
			EIR	Innovation	Education & HR	ICT
Sweden	1	9.43	9.58	9.74	8.92	9.49
Finland	2	9.33	9.65	9.66	8.77	9.22
Denmark	3	9.16	9.63	9.49	8.63	8.88
Netherlands	4	9.11	8.79	9.46	8.75	9.45
Norway	5	9.11	9.47	9.01	9.43	8.53
United States	12	8.77	8.41	9.46	8.70	8.51
United Kingdom	14	8.76	9.20	9.12	7.27	9.45
United Arab Emirate	42	6.94	6.50	6.60	5.80	8.88
Saudi Arabia	50	5.96	5.68	4.14	5.65	8.37
Qatar	54	5.84	6.87	6.42	3.41	6.65
Kuwait	64	5.33	5.86	5.22	3.70	6.33
Russian Federation	55	5.78	2.23	6.93	6.79	7.16
Brazil	60	5.58	4.17	6.31	5.61	6.24
China	84	4.37	3.79	5.99	3.93	3.79
India	110	3.06	3.57	4.50	2.26	1.90

SOURCE: (World Bank, 2012)



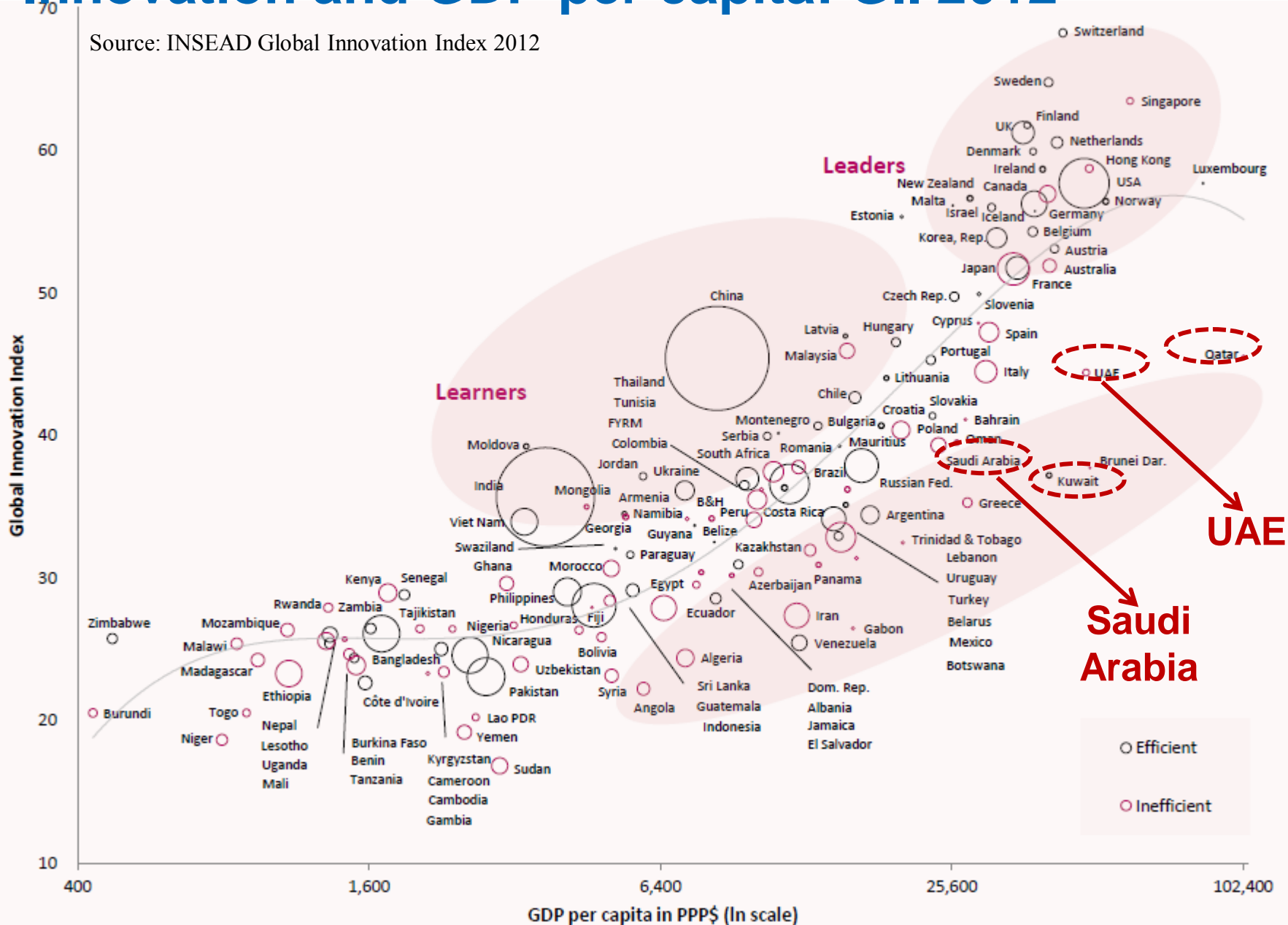
# World Bank: KAM Scorecard

Data from World Bank 2012



# Innovation and GDP per capita: GII 2012

Source: INSEAD Global Innovation Index 2012



# Natural Resource Rich Economies (NRREs): current status and challenges

# Natural Resource Rich Economies: SWOT

A natural resource-rich economy with a strategic vision to create a k-intensive diversified economy

## STRENGTHS

- Wealth
- Strategic Vision
- Choice

## WEAKNESSES

- Low K economy
- Comfortable
- Complacent

## THREATS

- Time
- Competition
- Exhaustion

## OPPORTUNITIES

- Regional Lead
- Sustainable
- K - transformed

# NRREs Current Status

**QATAR SCIENCE & TECHNOLOGY PARK**

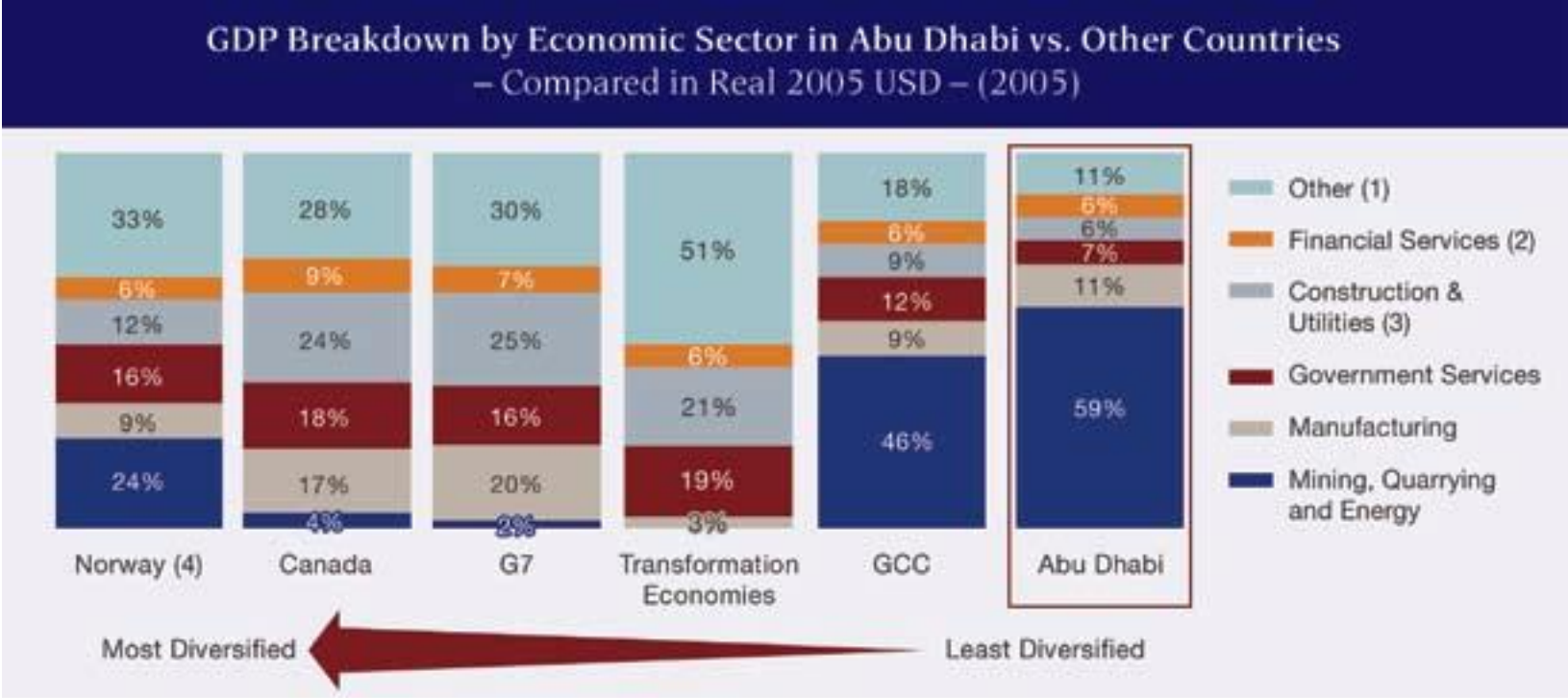


*Member of Qatar Foundation*



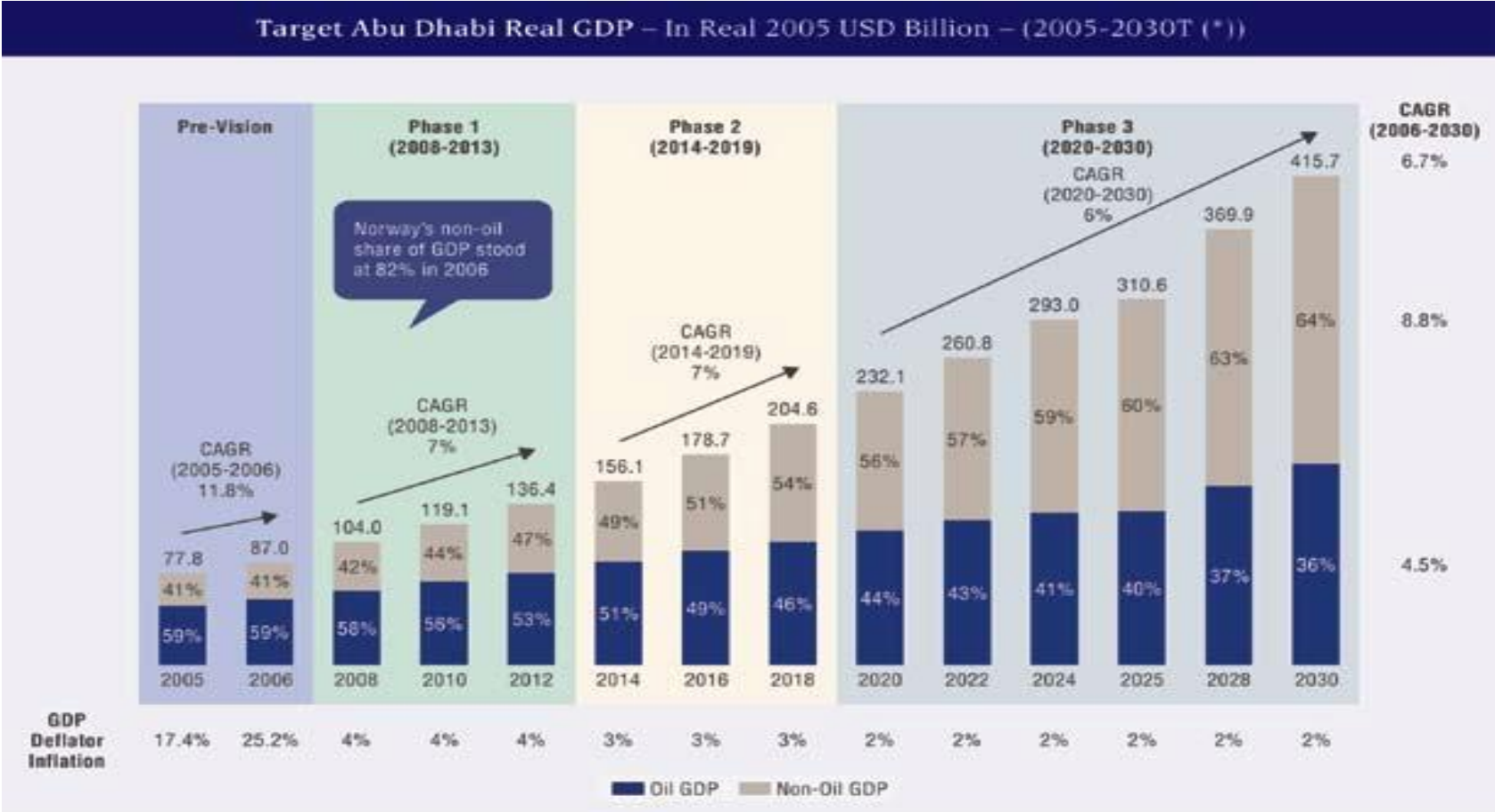
**SWANSEA UNIVERSITY**  
PRIFYSGOL ABERTAWE

# NRREs Current Challenges



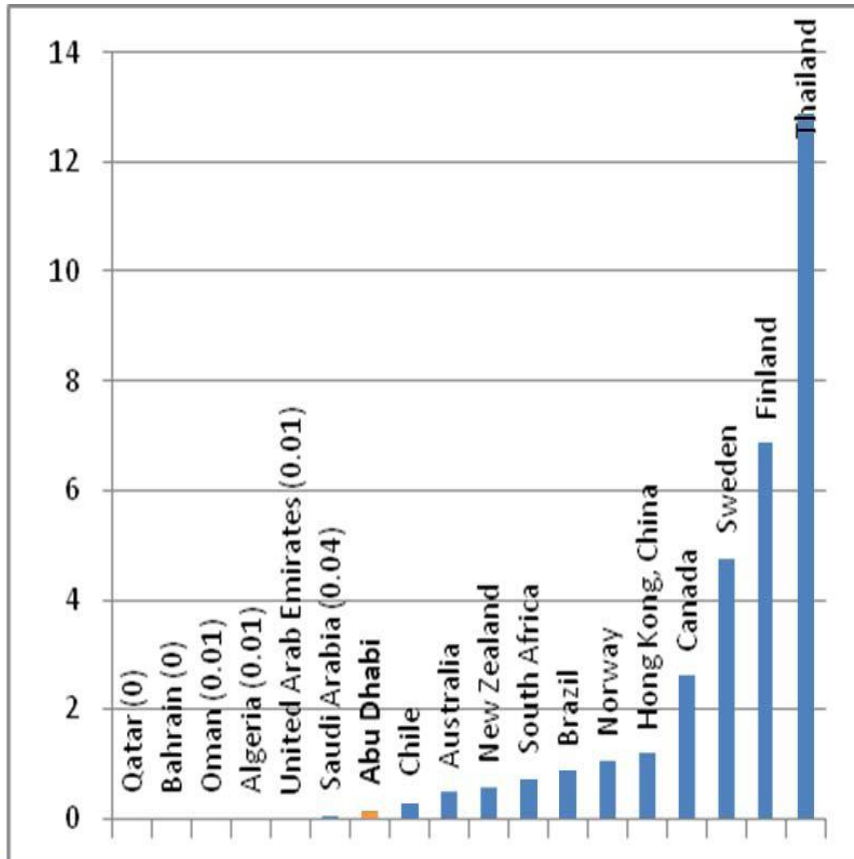
(The Economic Vision 2030 Abu Dhabi)

# NRREs Current Challenges



# NRREs Current Challenges

## High tech exports as a share of GDP



Source: Estimates based on World Bank (2009), and Department of Planning and Economy



# NRREs Current interventions

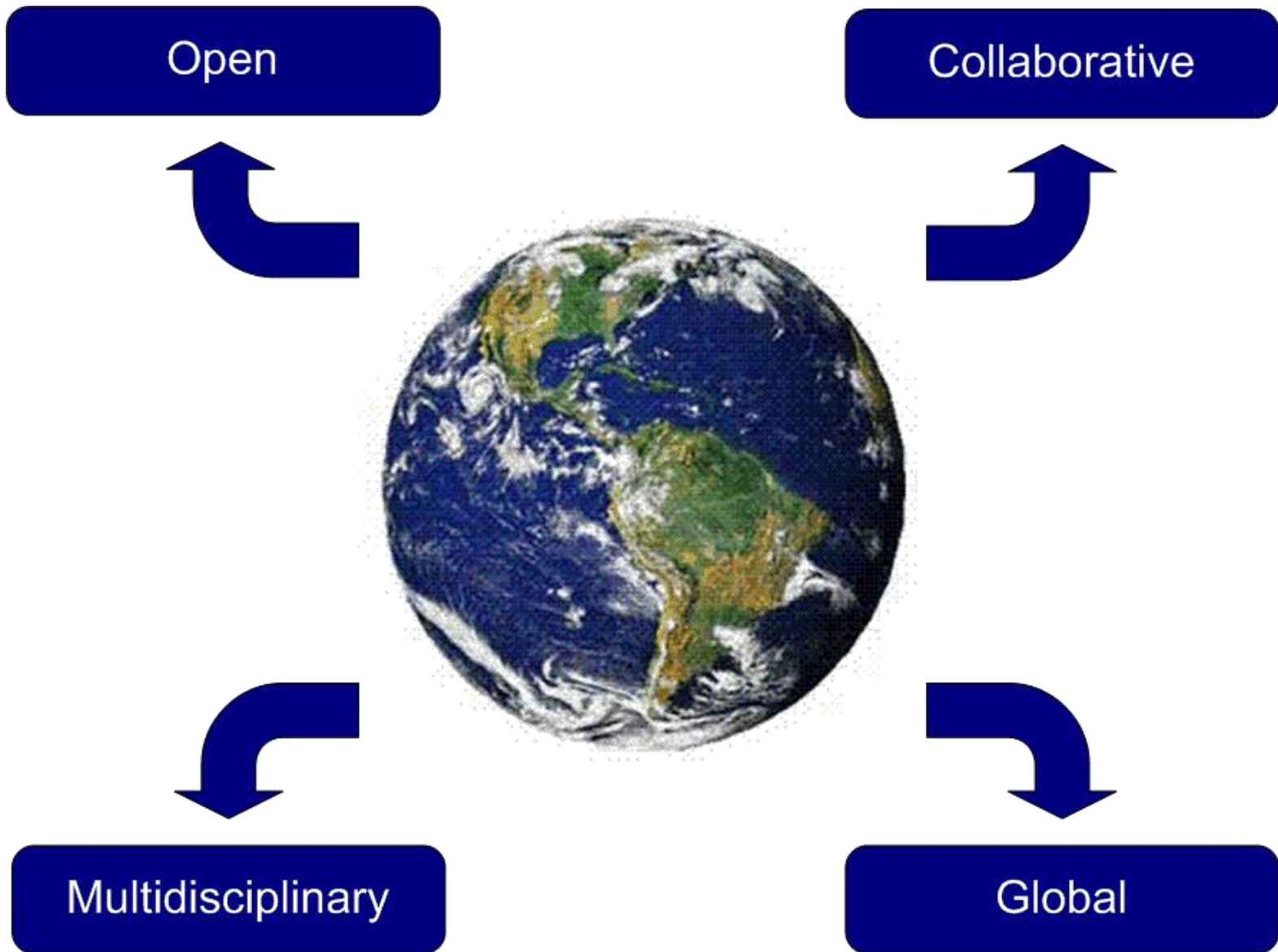
- Foreign Direct Investment
- Education and Knowledge Policies
- Business attraction policy
- SWF and Investments

*“A diversified and flexible Knowledge based economy will be powered by skilled emirates and strengthened by world class talent to ensure long term prosperity” –UAE VISION 2021*

# NRREs: Current Status

- IKED Compiled report in 2010 – identified strengths and weakness
- Challenges:
  - Economic diversification
  - Skilled workforce retention
  - Effective knowledge networks
  - Low R&D activity
  - Sustainability
  - Bureaucracy and governance
- Reports are Government initiated and sponsored

# Open Innovation



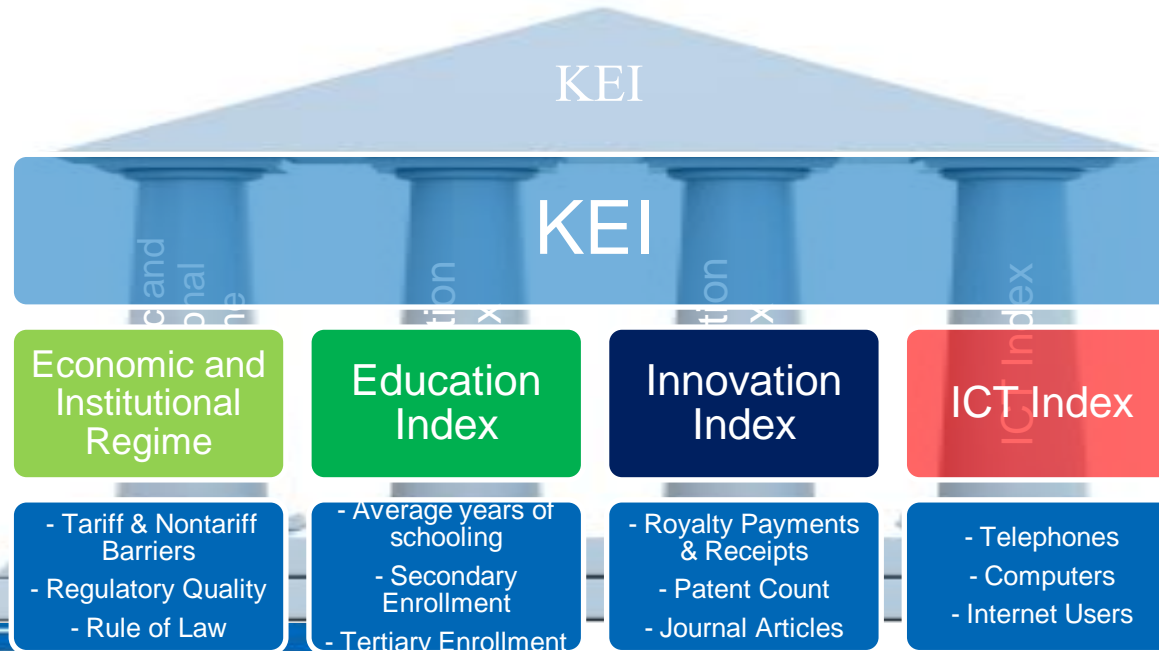
# Annealing the triple helix model within the KEI “temple furnace”

Greek temple picture adapted from “Career & Work Life Matters”, Vol. 2, no. 20 (ISSN 2150-6299)

Government

Business

Academia

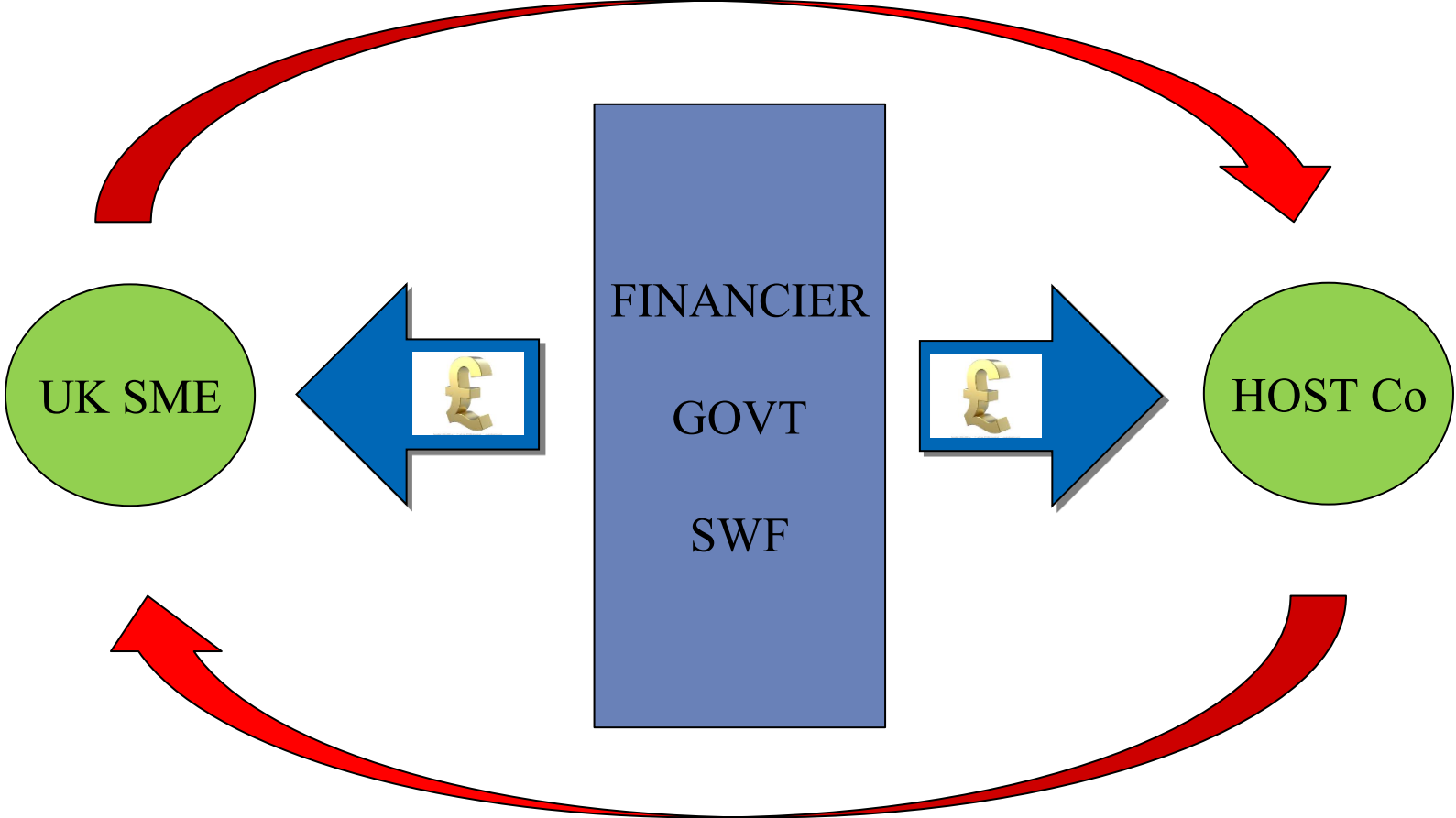


# Companion Direct Investment (CDI): an alternative paradigm

# Companion Direct Investment : CDI



# Companion Direct Investment : CDI



Knowledge Flows Between Companies

# Companion Direct Investment : CDI

## Definition:

An Innovation engine exhibiting reciprocal, multi way and multi directional monetary and knowledge transactions. CDI possesses the following properties:

1. A financial transaction is made from the Host Country (Financier) and channelled as an equity investment into both an established Knowledge intensive micro company – located in a Knowledge Intensive region and prospective start up enterprise located in Host Country
2. Initial Knowledge Transfer and potentially IP transactions are made by knowledge intensive micro company on to the new start up company in host region to initialise its enterprise innovation engine



# CDI Benefit and Policy Implications

- Integration of CDI is linked to long term Strategic vision
- Knowledge transfers and 'strengthening collaboration': vision objectives
- Local and skilled employment
- Trigger Entrepreneurial mind-set amongst Local Population
- Emiratisation and Nationalisation of workforce
- Regional development and innovation hub. cross fertilization
- Wider sectorial Benefits for example health tourism

# Case Study: Emirate of Abu Dhabi



# Case study : Abu Dhabi

- Based Upon Small Micro Company based In Wales
- Evaluated the options to internationalise via traditional FDI method OR New CDI concept
- Figures obtained from company
- Business start up operations discussed with colleagues in Middle East therefore realistic targets were contemplated



# Case study : Abu Dhabi

micro-company in a  
k-intensive region,  
past its infancy  
stage, with a  
product near to  
market, but with  
limited resources

## STRENGTHS

- K - Rich
- Death Valley safe
- K - Ecosystem

## WEAKNESSES

- Underfunded
- Limited Market
- Survival

## THREATS

- Time
- Competition
- Exhaustion

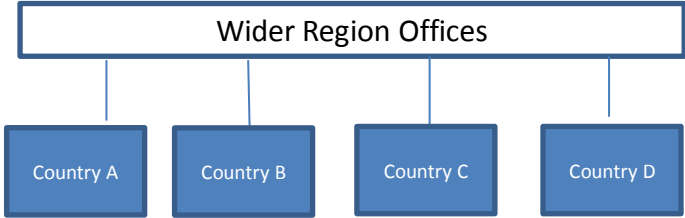
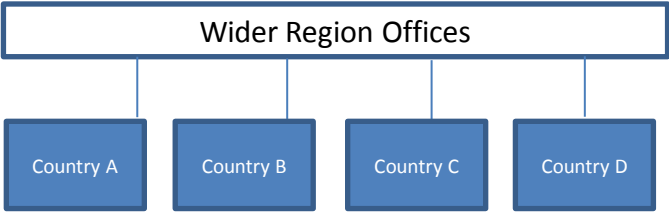
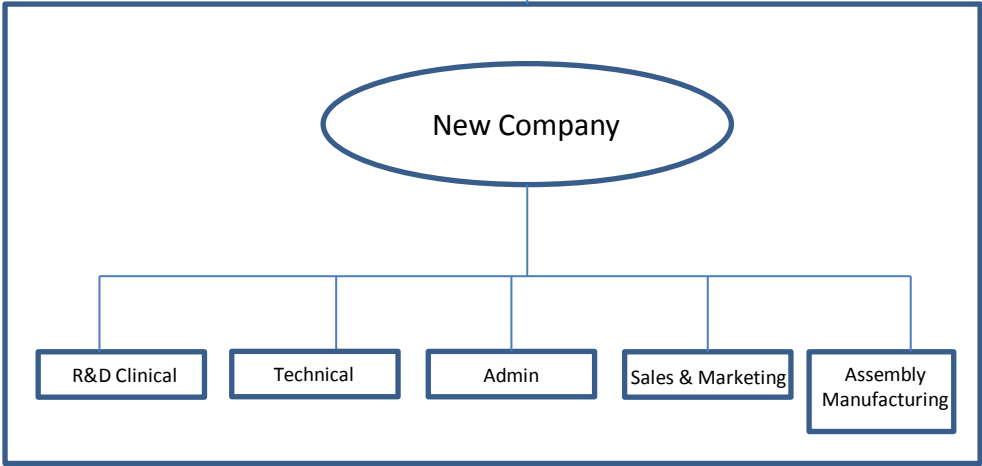
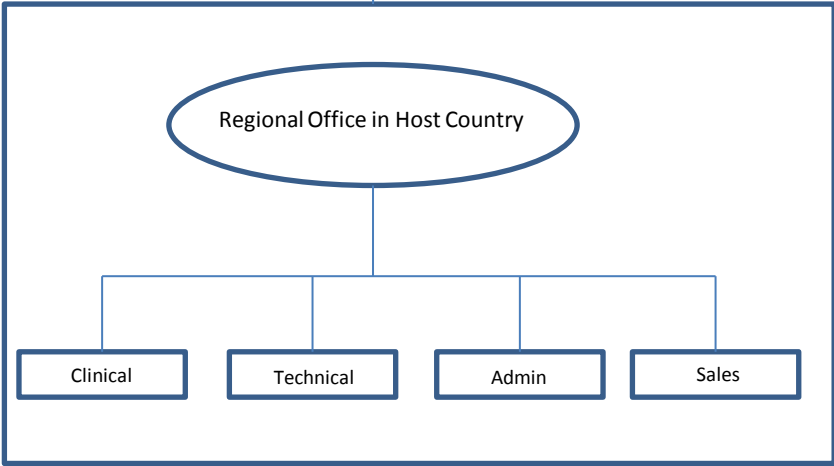
## OPPORTUNITIES

- Global Market
- IP Platform
- Open Innovation

- Knowledge Based Medical Device Company
- Early Stage Past Infancy Stage
- Has Global Needs and IP position
- Global Aspirations
- Resource Constrained

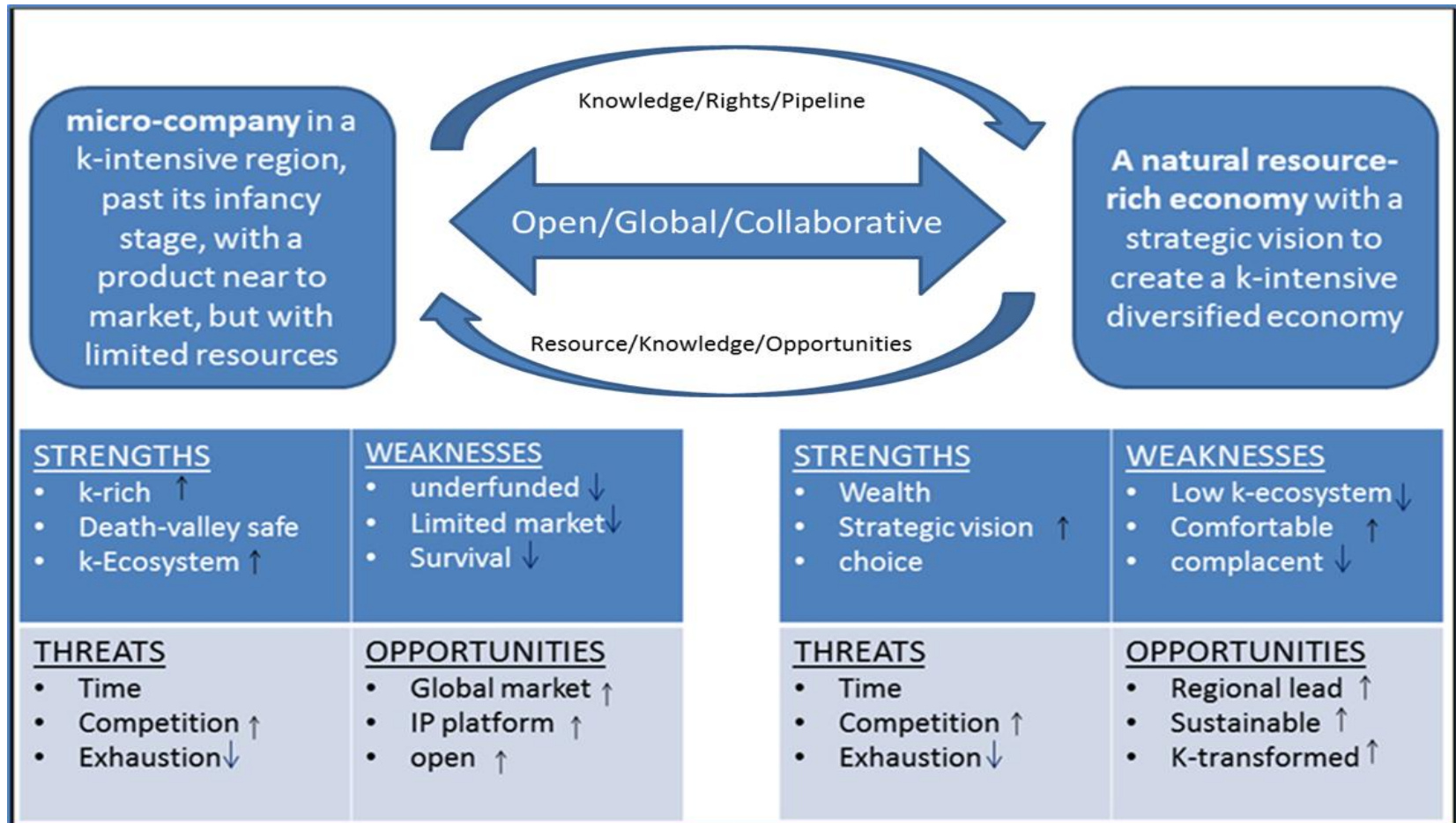
- FDI
- Scarce Resources
  - Defines Target Region
  - Regional Office
  - Has Sales /Distribution/Support

- CDI
- Co – Partners with the region
  - Receives Investment, region becomes a minority Shareholder
  - A Regional New Company Established with Major Equity for region
  - New Company Has Rights to the region





# ABU DHABI



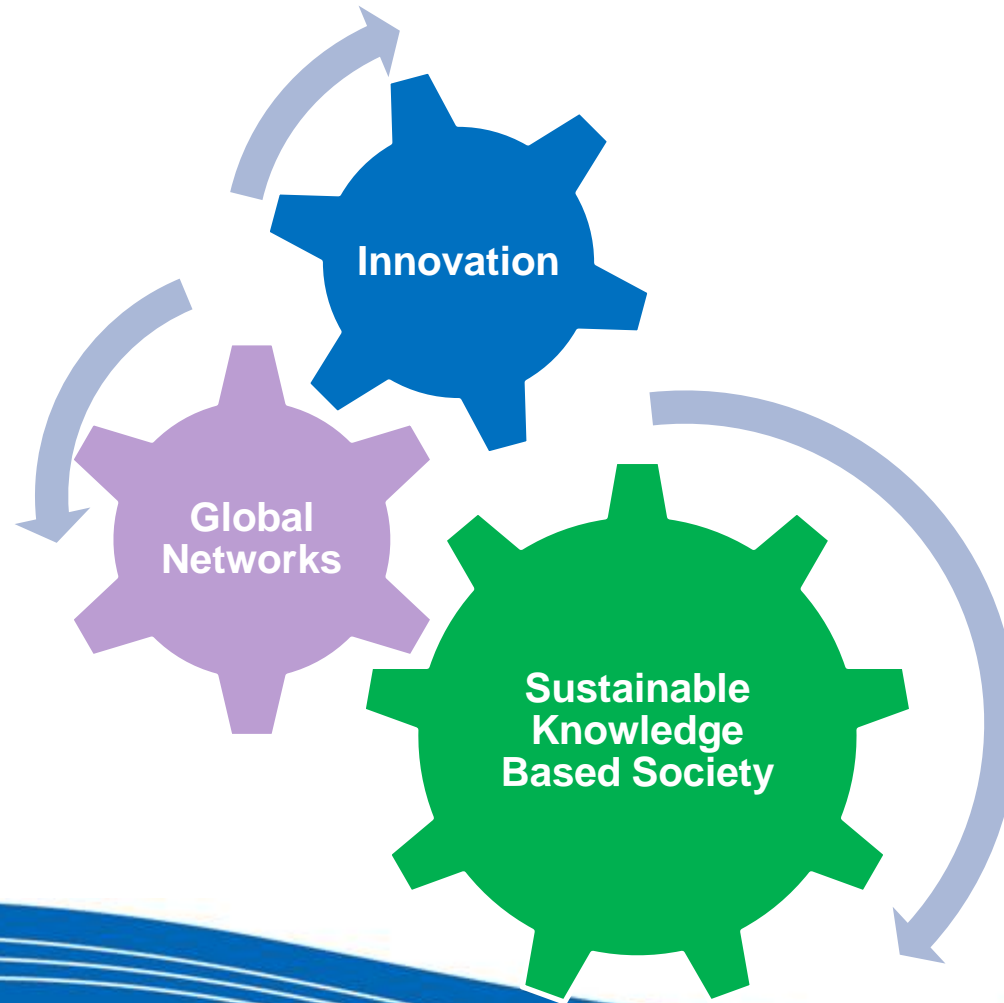
# Conclusion and further work

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- Novel open innovation investment model has been introduced: CDI
- Case study identified CDI's financial economic and knowledge creation benefit
- CDI sits harmoniously within wider strategic vision for regions
- Further work – greater understanding of the cultural levers of influence and acceptance on the creation of Knowledge economy is needed for actual implementation of CDI to work.
- A real case study to confirm the theoretical model



# Achieving Sustainable growth within a global interconnected world



# Thank You