



**UPM**  
UNIVERSITI PUTRA MALAYSIA  
BERILMU BERBAKTI

# Good Practice in Integrating IP into Innovation Policies



**Mohamed Shariff**

**Putra Science Park  
Universiti Putra Malaysia**

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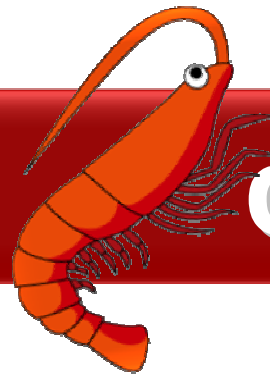
**Mohamed Shariff**



**Universiti Putra Malaysia (since 1977)**

**Doctor of Veterinary Medicine**

**Fish/shrimp doctor**



# FAST TARGET™ WHITE SPOT VIRUS DETECTION KIT

2000



# Mohamed Shariff

✓ 2006

**Director, Innovation and  
commercialisation Centre**

✓ **Current - Director, Putra Science  
Park**

# Contents



**Innovating Malaysia**



**IP policy integration**



**Challenges**

# Natural Rubber - Malaysia

- Prior to 1957, Malaysian economy was heavily dependent on primary products
- 1990 - World's largest producer



**1/4 of world  
production**



# Natural Rubber



**Exported as raw commodity - source of cash income for millions of rural household**

# Natural Rubber - Malaysia



**Processing  
raw rubber  
sheets**

**Exported smoked  
rubber sheet**

**Sold at relatively  
low price**





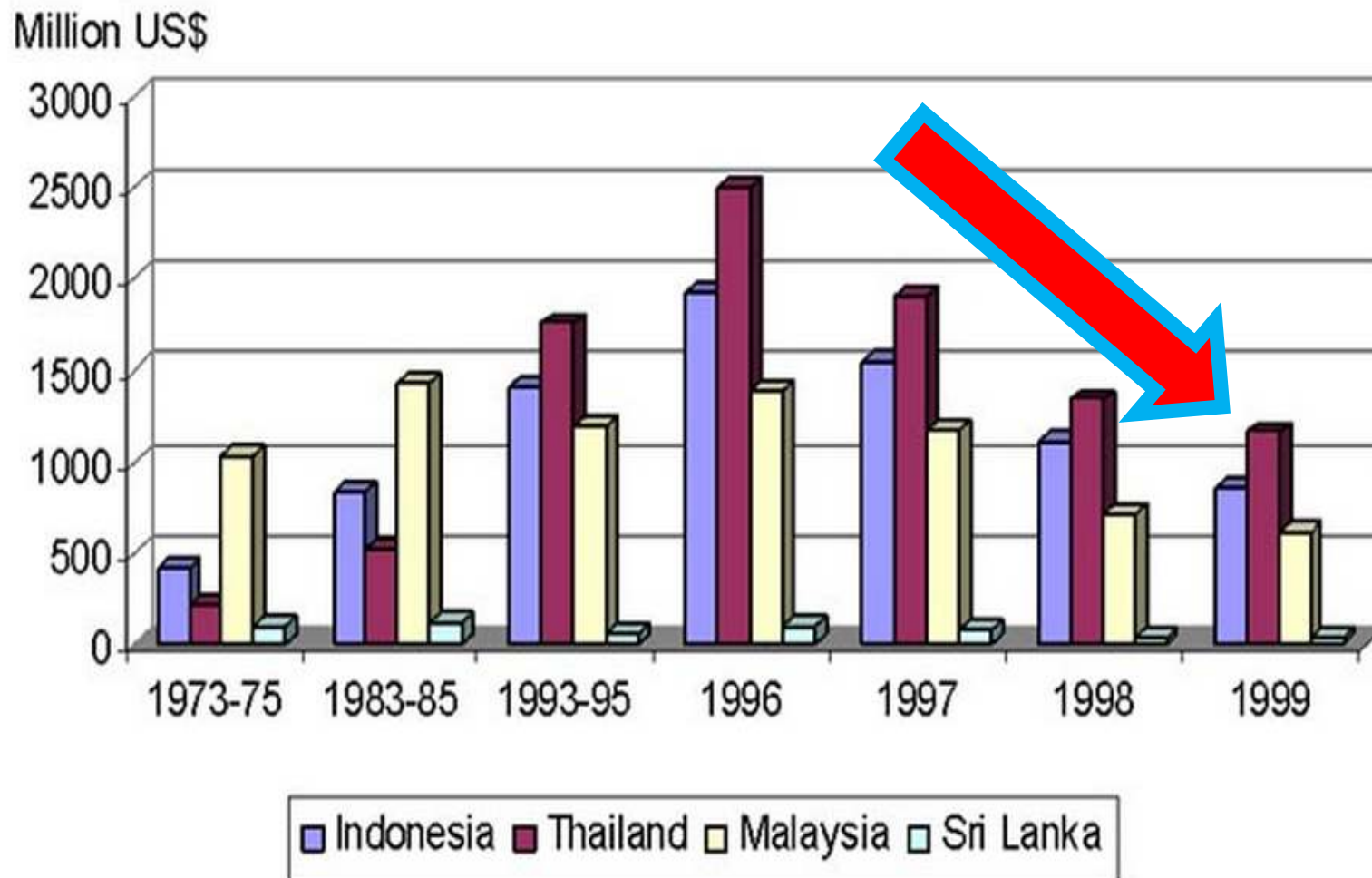
# Imported value added rubber products



**Imported at relatively high  
cost**

# Drop in value of agriculture (Rubber) based commodities

Exports Value of Natural Rubber by Major Exporters

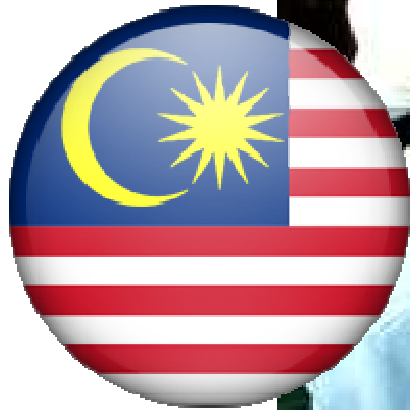


# Globalization

Cannot be complacent or else  
we will be dependent on  
other forever!



Have to compete with  
the rest of the world!



**Today  
Malaysia**



**world's leader  
in medical  
gloves**

**GOODYEAR**



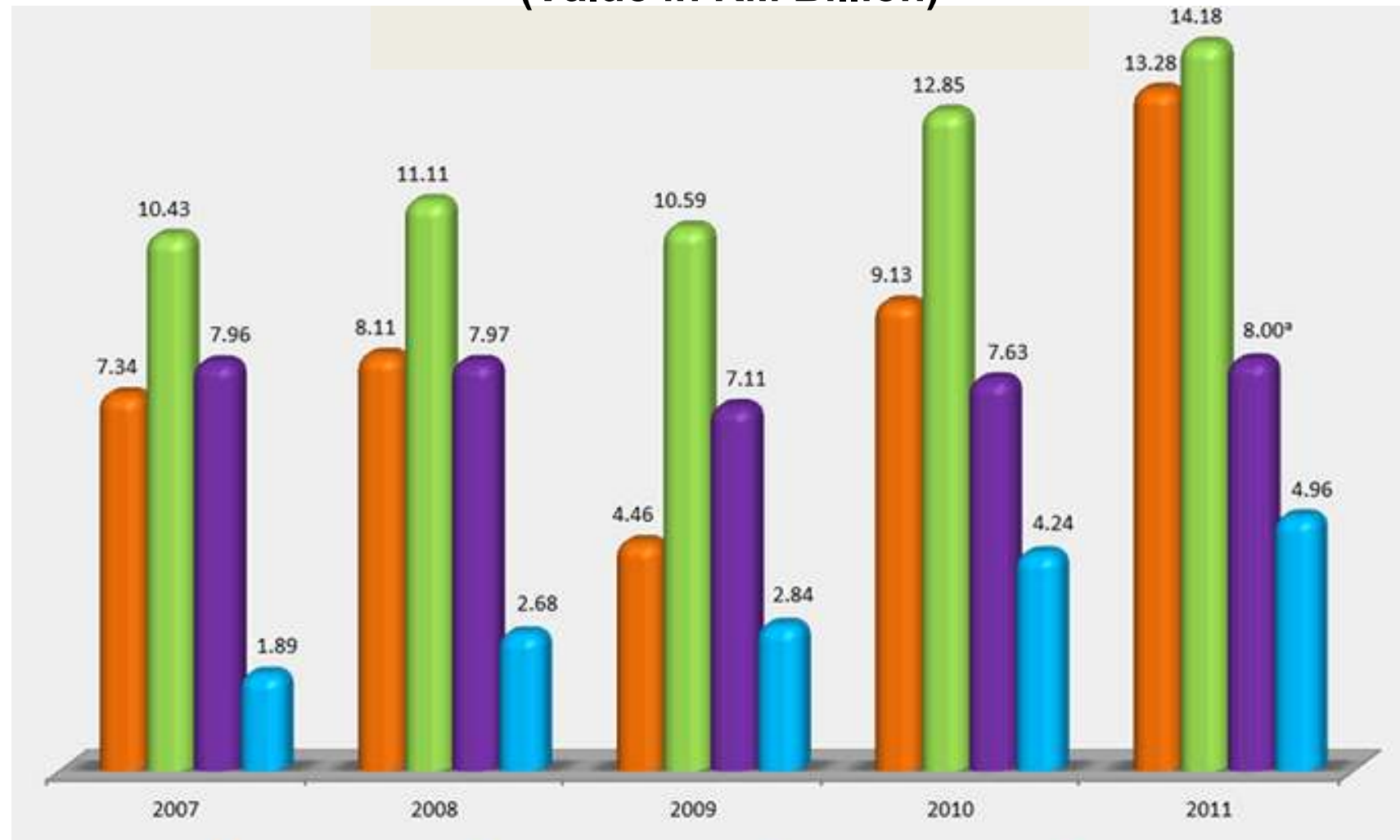
**BRIDGESTONE**

*Your Journey, Our Passion*

**Continental**



## Malaysian export earnings from natural rubber & rubber products (Value in RM Billion)

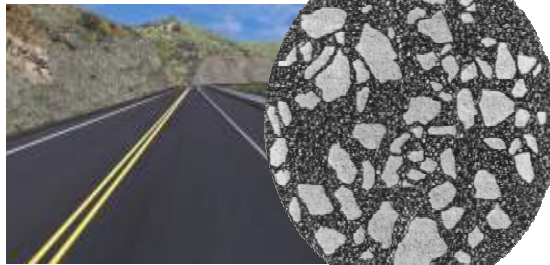
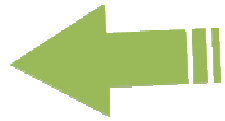
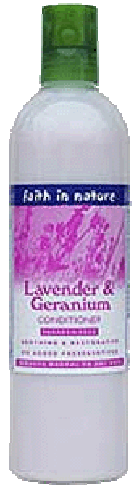


- Natural Rubber
- Rubber Products
- Heveawood Products
- Other Rubber

**Palm oil industry**  
**5 million ha**  
**2<sup>nd</sup> world largest producer**



# Oil Palm





# MALAYSIAN POLICY

## National Biomass Strategy 2020



**National Biomass strategy 2020: New wealth creation for Malaysia's Palm Oil Industry**



**Increase growth national income (GNI) to \$10 billion by 2020**



**Reduce emission of carbon dioxide & develop renewable energy**



**Create 66,000 new jobs by 2020**

**BIG PICTURE  
BIOMASS UTILIZATION FOR PALM OIL INDUSTRY  
EB GROUP**

**BIG PICTURE**

of ENVIRONMENTAL BIOTECHNOLOGY RESEARCH GROUP



**Policy: It's the difference between success & failure**





Public Service – **TOGETHER WE TRANSFORM**



# Think out of the box

By **TEH ENG HOCK**  
 enghock@thestar.com.my

**T**he Civil Service needs to focus on innovation and creativity in today's competitive environment in order to change the public sector transformation.

Embracing innovation and creativity is key to successfully supporting the four pillars of the Government, namely the iMalaysia concept, the Government Transformation Programme, New Economic Model and the 10th Malaysian Plan.

Government agencies need to prioritise efforts in introducing innovation to all aspects, including management and service delivery to people and clients.

Innovation, coupled with proper planning, will help the country achieve its objective of being a high-income nation within a short period of time.

Prime Minister Datuk Seri Mohd. Najib Tun Abdul Razak had emphasised that the Government would transform Malaysia through a holistic innovative process, ranging from innovative administration in the private and public sector, societal innovation, urban and rural innovation, and branding innovation.

Other fields singled out for innovation were education, healthcare, transportation and social security.

through pre-cursors such as the iMalaysia concept, National Key Result Areas (NKRAs), Key Performance Indicators (KPI), New Economic Model, and the establishment of Special Taskforce to Facilitate Business (PEMUDAH), Performance Management and Delivery Unit (PEMANDU) and the National Economic Advisory Council (NEAC).

This underlined the Government's commitment in bringing about total innovation to bring the country to the next economic level.

"If previously, Quality Control Circle (QCC) focused on solving problems pertaining to main issues within departments, today, Innovative and Creative Circle (ICC) has given space to the members of its organisation to be innovative and creative in producing new ideas, without having to wait for issues or problems to occur within the department.

"In accordance to that member of the organisation must be more sensitive, concern, and proactive within their respective working environment, in line with the aim to improve our service," said Najib

He said: "If once upon a time we succeeded in transforming the economy from agriculture to industrial based, now we are moving forward towards a new economic model based on innova-



**Najib:** 'I do not want the automation culture to become the lifestyle among the civil servants'

While the achievements of the civil service had been measured in terms of productivity in the past, he said the civil

Government agencies have been encouraged to create an environment that is conducive for creative thinking.



The Prime Minister's Innovation Award trophy

The agencies and departments must also raise awareness on the necessity of the innovative approach in service delivery. This can be done through campaigns, exhibitions, seminars, talks and contests.

Internally, each agency and department must set up a mechanism which encourages and gathers ideas from its staff. All suggestions must be received regardless if it brings about a big o

# Innovation - Inland Revenue Board wins PM Award

27 May 2010 The Star

THE STAR, THURSDAY 27 MAY 2010

## Nation

thestar.com.my/news/nation

free seats  
kok >N18

Illegal sand mining  
angers folk >N29



Rep: We  
need more  
reports on  
activities  
>N6

## RM1mil award for IRB

### Reward could be used for bonus or training, says PM

**KUALA LUMPUR:** The Inland Revenue Board (IRB) has taken home a RM1mil incentive for winning the Prime Minister's Innovation Award.

The reward, said Prime Minister Datuk Seri Najib Tun Razak, could be used in any way deemed meaningful by the board – including for training purposes or to be given out as bonus.

Najib hoped the award would be a strong encouragement for the department – all the way from the head of department to the lowest level of staff – to want to perform even better.

The Prime Minister presented the award at a ceremony yesterday.

IRB chief executive officer Datuk Hasmah Abdullah said the department had always been negatively perceived by the public, but this would not dampen its determination to keep improving.

"Many people have the common perception that paying taxes is burdening. Our key to innovation is to make tax payment easy and we have done it successfully," she said after receiving the award from Najib.

Earlier in his speech, Najib said Malaysia had no choice but to be willing to embrace change in this globalised era. The public sector must be able to think out of the box and be creative

to bring about development.

"We need to engage new methodology and approach because other countries which were not our competitors before have changed and are competing against us," he said.

He added that the Government sector had taken a big leap when it introduced the National Key Result Areas and Key Performance Index to ensure that the country was not lagging behind when others were moving forward.

"There must be innovation in the government administration to ensure that its outcome will please and satisfy the *rakyat*," he said.

rs

### Two

**Feminine feminist**

Miss Universe Malaysia 2010 Nadine Ann Thomas is a self-confessed feminist who is into make-up and looking pretty.

### Biz

**TM's backhaul rates too high**

In Bhd says Telekom Malaysia's backhaul charges are expensive and it is forced to build its own facilities.

### ro

to move its headquarters to Shah Alam soon. Meanwhile, we were shocked to learn of

# Income Tax filing done Online



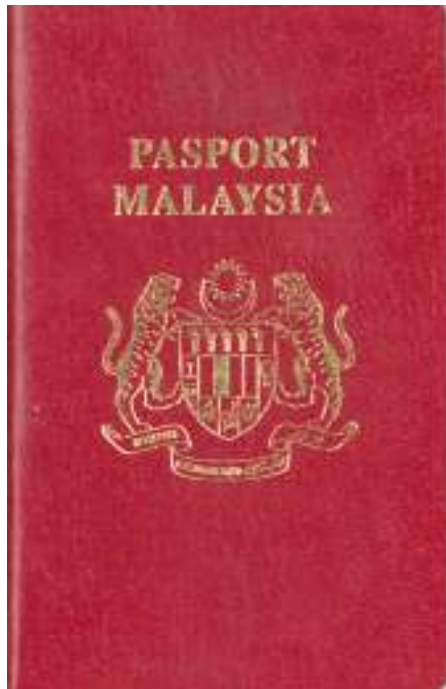
**E-Filing LHDNM**

**Easy, simple & Safe**

**PENGESAHAN PENERIMAAN e-BE BAGI TAHUN TAKSIRAN 2011**  
*ACKNOWLEDGEMENT RECEIPT e-BE FOR YEAR OF ASSESSMENT 2011*

Nombor Siri <i>Serial Number</i>	BE 240174
Nama <i>Name</i>	PROF DR MOHAMED SHARIFF BIN MOHAMED DIN
No. Cukai Pendapatan <i>Income Tax No.</i>	SG 02184673010
No. KP Baru <i>New IC No.</i>	490314055093
Jumlah Pendapatan <i>Total Income</i>	RM 209,402
Pendapatan Bercukai <i>Chargeable Income</i>	RM 190,369
Jumlah Cukai Yang Dikenakan <i>Total Tax Charged</i>	RM 10,144.94

# Renew passport



Deposit old passport





# Renew passport



**2 hrs**  
**New passport ready**



# Passing immigration



Insert  
passport

# Passing immigration



Thumb  
print

The image shows a person from the side, wearing a light blue and white long-sleeved shirt, blue jeans, and a black backpack. They are standing at an immigration checkpoint, using a grey machine. The machine has a small screen and a red sensor. A yellow arrow points from the text 'Thumb print' to the red sensor on the machine. The background is a blurred airport or travel terminal.

Used since 2003

# Commercialization: Moving to the global market



Pakistan  
India  
Philippines  
South Africa  
Guam  
Papua New  
Guinea  
Thailand  
Vietnam  
Egypt  
Turkey  
United Arab  
Republic  
Indonesia  
Bangladesh  
China  
Sudan  
Cameroon  
Nigeria  
USA



**R&D  
necessary  
to make  
product  
technologically  
competitive**

**Gross sales >US\$5 Million**

# Innovation a key factor

It's vital to help increase productivity, competitiveness



Business

INNOVATION is a vital ingredient to increasing productivity and ultimately raising the competitiveness of the country.

Through exploitation of local value chains, the same basic resource.

Innovation and development. Government will promote across the

The business

critical ingredient of this innovation process. For example, by ensuring a

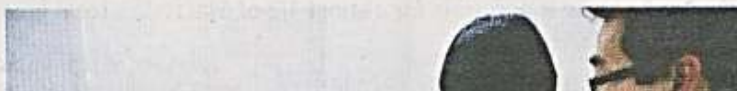
competitive right price. We see a clear

Investment and education are powerful drivers of an economic innovation. The desire

The Government of action

innovation system along four key dimensions: shaping a supportive ecosystem for innovation, creating

innovation in place. funding innovation



to promote participation from the industry to co-sponsor employees to obtain industrial PhDs.

Information technology (IT)

sector financing with Public Private Partnerships as an intermediate step. The Government will support development of knowledge-

providing access to specialised schemes, improving innovation capabilities. Providing specialised

deliberately create opportunities and opportunities for Malaysian companies to participate in the procurement process and the regulations.

Trade and investment policy will be biased towards building innovation.

An improved public procurement process is a key opportunity

to improve the level of innovation in companies. Procurement will create demand for SMEs to develop in key areas and potential.

They driver to compete to products that are more and safer.

Regulatory changes are to drive innovation. There

will be a push towards green technology through the National Green Policy, in preparation of products and services preferred choice for

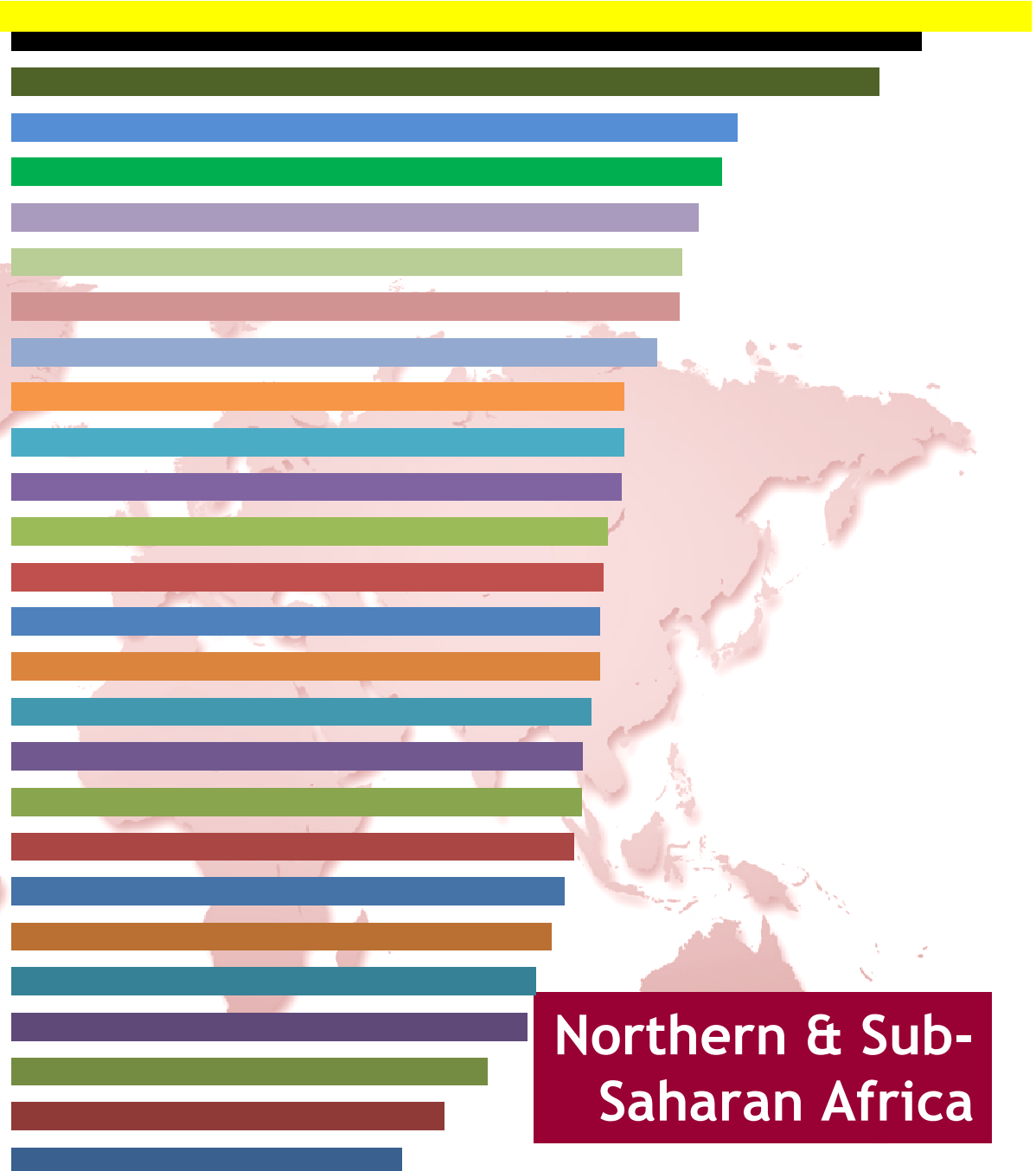
Without linking scientific knowledge to innovation policy, it is impossible to have sustainable development

Investing in science, research & education serves as a powerful engine of innovation in an economy

To increase productivity, & ultimately raising competitiveness of the country

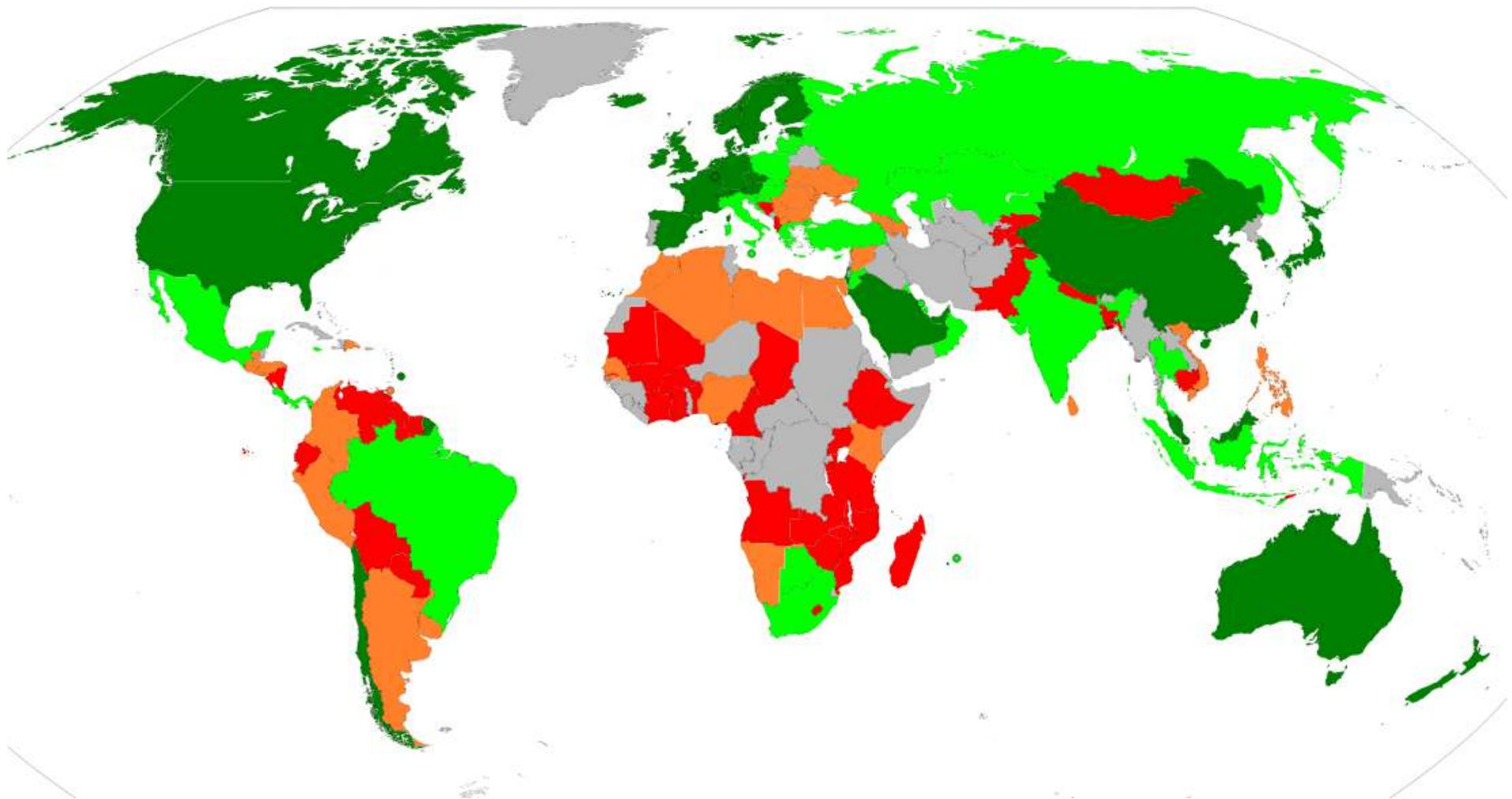
# Global Innovation Index - 2012

Rank	Country	Score
32	Malaysia	45.90
49	Mauritius	39.25
54	South Africa	37.45
85	Botswana	31.38
88	Morocco	30.65
92	Ghana	29.61
96	Kenya	28.94
97	Senegal	28.81
103	Egypt	27.88
106	Gabon	26.46
107	Zambia	26.45
110	Mozambique	26.33
115	Zimbabwe	25.74
117	Uganda	25.56
119	Mali	25.39
120	Malawi	25.36
121	Cameroon	25.00
122	Burkina Faso	24.63
123	Nigeria	24.57
126	Madagascar	24.23
128	Tanzania	23.86
131	Ethiopia	23.28
134	Cote d'Ivoire	22.62
135	Angola	22.22
137	Burundi	20.52
140	Niger	18.63
141	Sudan	16.81



**Northern & Sub-Saharan Africa**

# Global Competitiveness Index 2008-2009



# Policies



AGENSI INOVASI MALAYSIA

# INNOVATING MALAYSIA

A Joint Effort by  
**MOSTI & AIM**

**NATIONAL INNOVATION POLICY**

# Strengthen building blocks of innovation

## Structural Enhancement

- **Institution Tech Transfer Office**
- **A National TTO**
- **Malaysian IP Academy**
- **IP court**





# TTO Practices

- ❑ Apply systematic & structured innovation methodology
- ❑ Create healthy relationship to blossom between private sector & institution

**“Best practices” or  
“Worst practices”**



# Strengthen building blocks of innovation



**Build  
future  
skills  
today**

**TTO & Graduates** – must have:

- Innovation methodology

**The Workforce** must:

- ❑ Master an Innovation Methodology for creating new products & services
- ❑ Business models
- improving public services

# Nurture & develop Intellectual capital

## **Existing Wealth:**

Unearth hidden IPs in Univ. & RI -  
find novel ways of converting it to  
wealth



## **Future Wealth:**

Move from conventional R&D to IP-  
Driven R&D, where IP &  
commercialisation prospects become  
the starting point

# Creating IP & looking for a suitable partner

## Traditional approach:

**Obsolete  
model in  
an  
innovation  
economy**



- Initiation of R&D project

- Completion or near completion of R&D Project

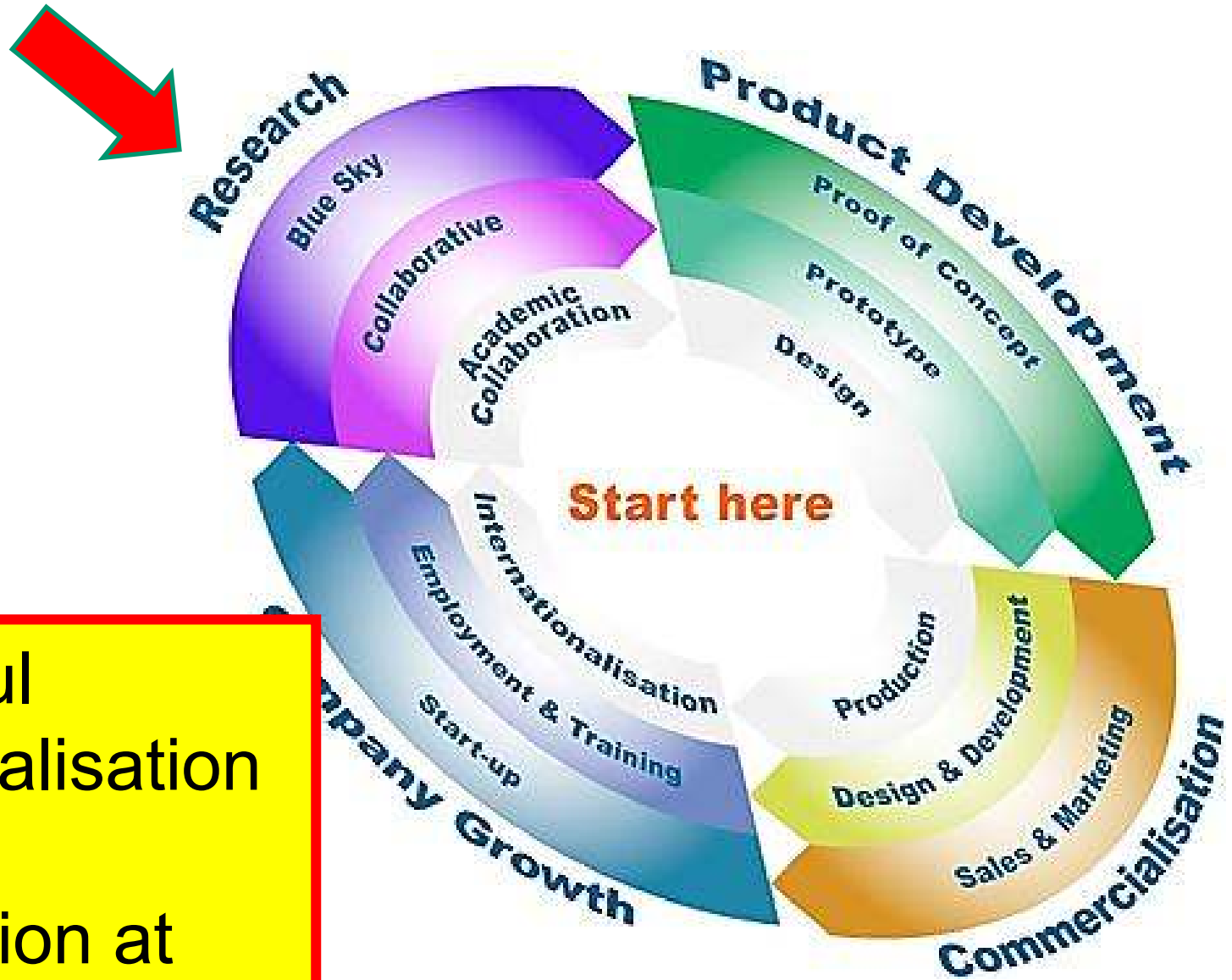
- Explore IP Potential & suitable partners for commercialisation

## Bridge gap with industry

- **Match making has not shown desired results**
- **Develop new methods of pairing private sector & creator of IP**

**Bridge the gap between expectations of industry & IP created by Univ/PRIs**

# Early stage collaboration with industry partners

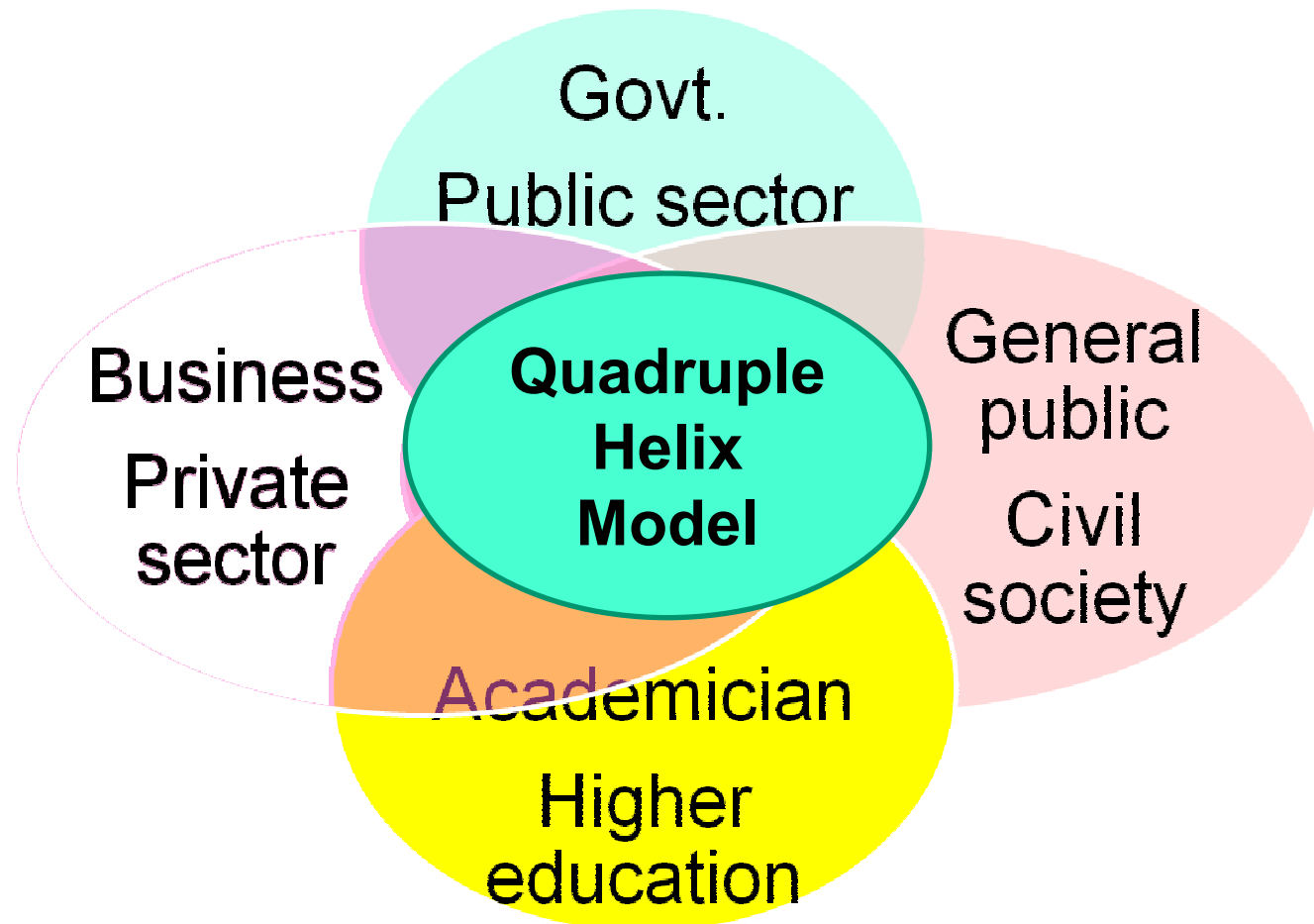


Successful commercialisation ? - start collaboration at

# Partnership bet. Inventor & industry

- Univ/PRI have to partner with private sector to commercialise IP using Quadruple Helix Model

**IP  
identified  
& “Locked-  
In” before  
initiating  
projects**



# Project funds for collaborative partners

**Funds to  
scientists  
collaborating  
with industry  
partner or  
vice versa**

**Lab scale  
technologies**



**Pilot scale or  
prototype  
production**



**Commercial  
scale**



# Drafting IP Documents

## Drafting patent – specialised skill

- Critical – either successful granting of IP or its rejection
- Prior art, novelty, claims determine the success rate
- Patent agents need enhanced skilled for patent drafting

**Establish dedicated institute to  
provide training**

# Biotechnology for Wealth Creation and Social Well-being

■■■ The way forward



**By 2020 Malaysia will be a global player in  
biotechnology & will generate at least 20 global  
Malaysian companies**

# Implementation approach

## Phase I (2005-2010) Capacity building

- Est. of advisory & implementation Councils
- Est. of Malaysian Biotch Corporation
- Education & training of knowledge workers
- **Development of legal & IP framework**
- Business dev. Through Accelerator Program
- Build Malaysian Branding
- Initial job & industry creation in agricultural biotech, healthcare biotech, industrial biotech and bioinformatic

## Phase II (2011-2015) Science to Business

- Develop expertise in drug discovery & development based on natural resources
- **New product development**
- **Technology acquisition**
- Intensify investment promotion
- Intensity spinning – off of companies
- Strengthen branding
- Develop capability in technology licensing
- Knowledge-intensive job creation

## Phase III (2016-2020) Global Presence

- Consolidate strengths & capabilities in technology develop
- Further develop expertise & strength in drug discovery & development
- **Strengthen innovation & tech licensing**
- Promote global Malaysian Companies

“....knowledge based industry & will propel Malaysia further up the economic value chain ensuring the realisation of Vision 2020

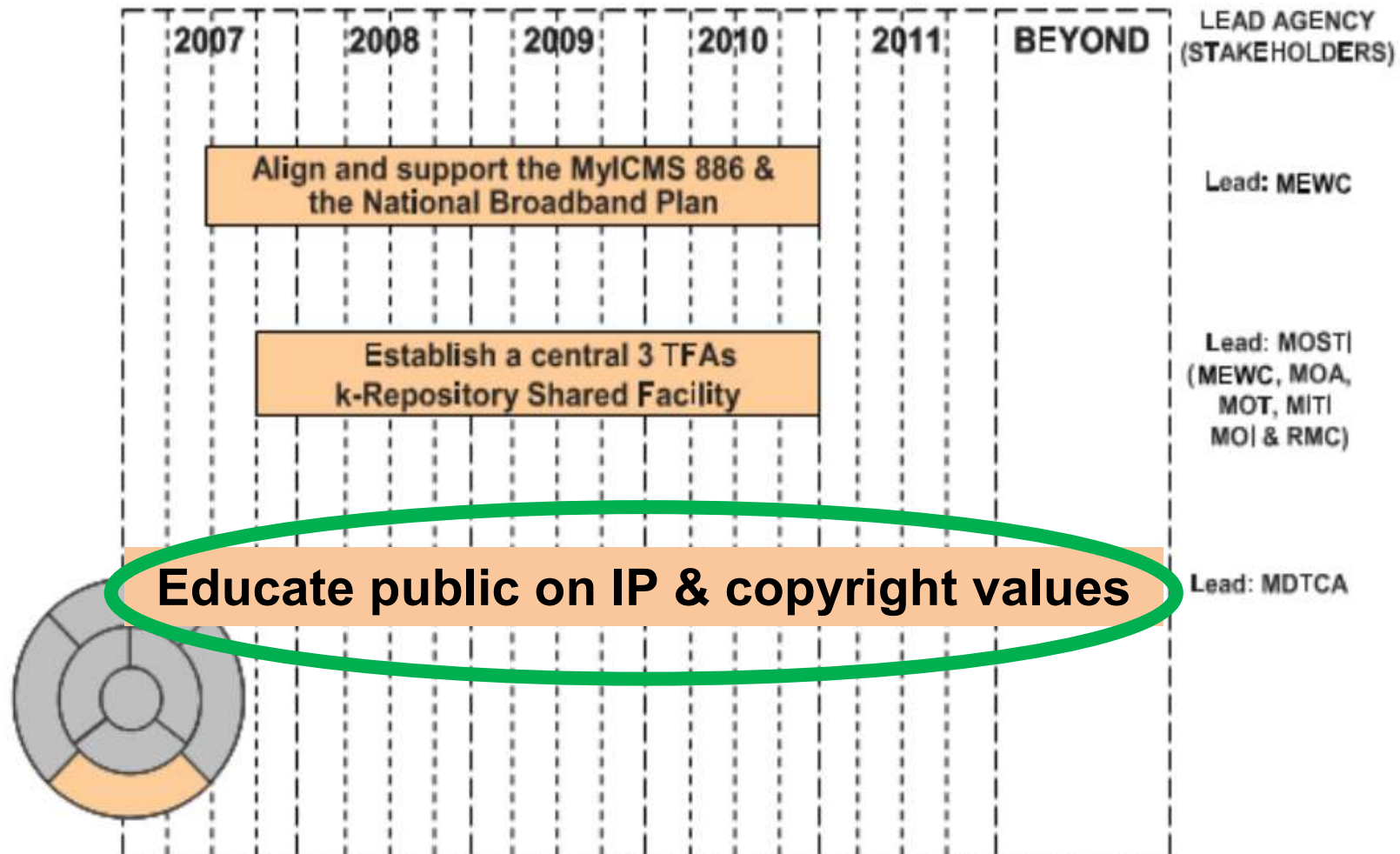
[NATIONAL STRATEGIC ICT ROADMAP]



KEMENTERIAN SAINS, TEKNOLOGI & INOVASI, MALAYSIA

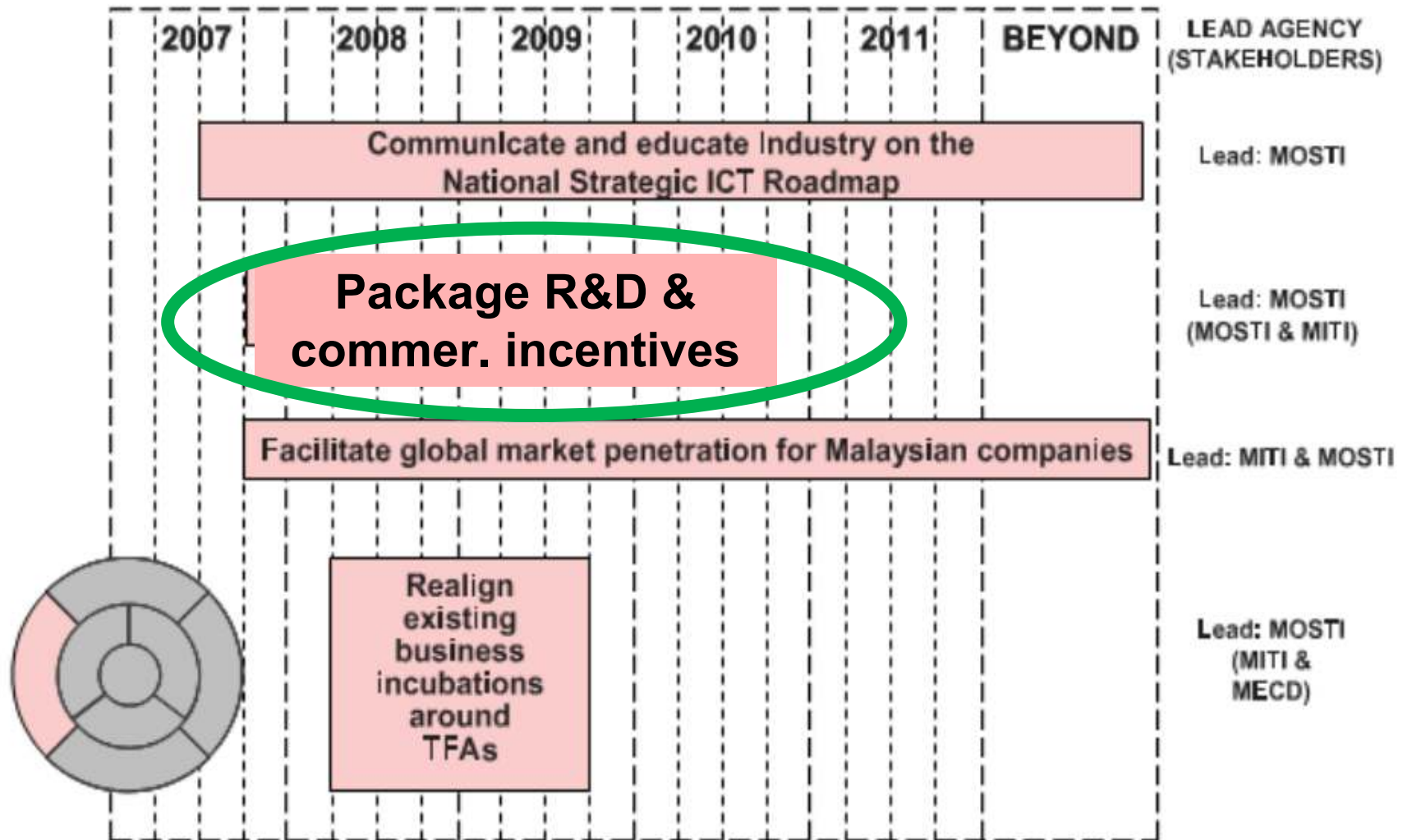
# Infrastructure Development

Figure 7: Action Plans for Infrastructure Development



# Facilitate global market penetration for Malaysian companies & match IP with Venture Capitals (VC)

Figure 8: Action Plans for Commercialisation and Growth Acceleration

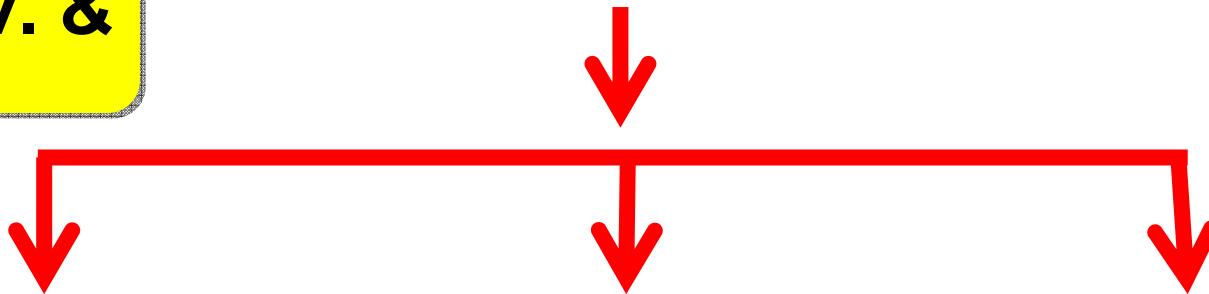


# Malaysia's S & T Policy for the 21 st Century



**Develop strategies & programs for Univ. & PRI**

**Establish Business Develop. Unit in Ministry of Science**

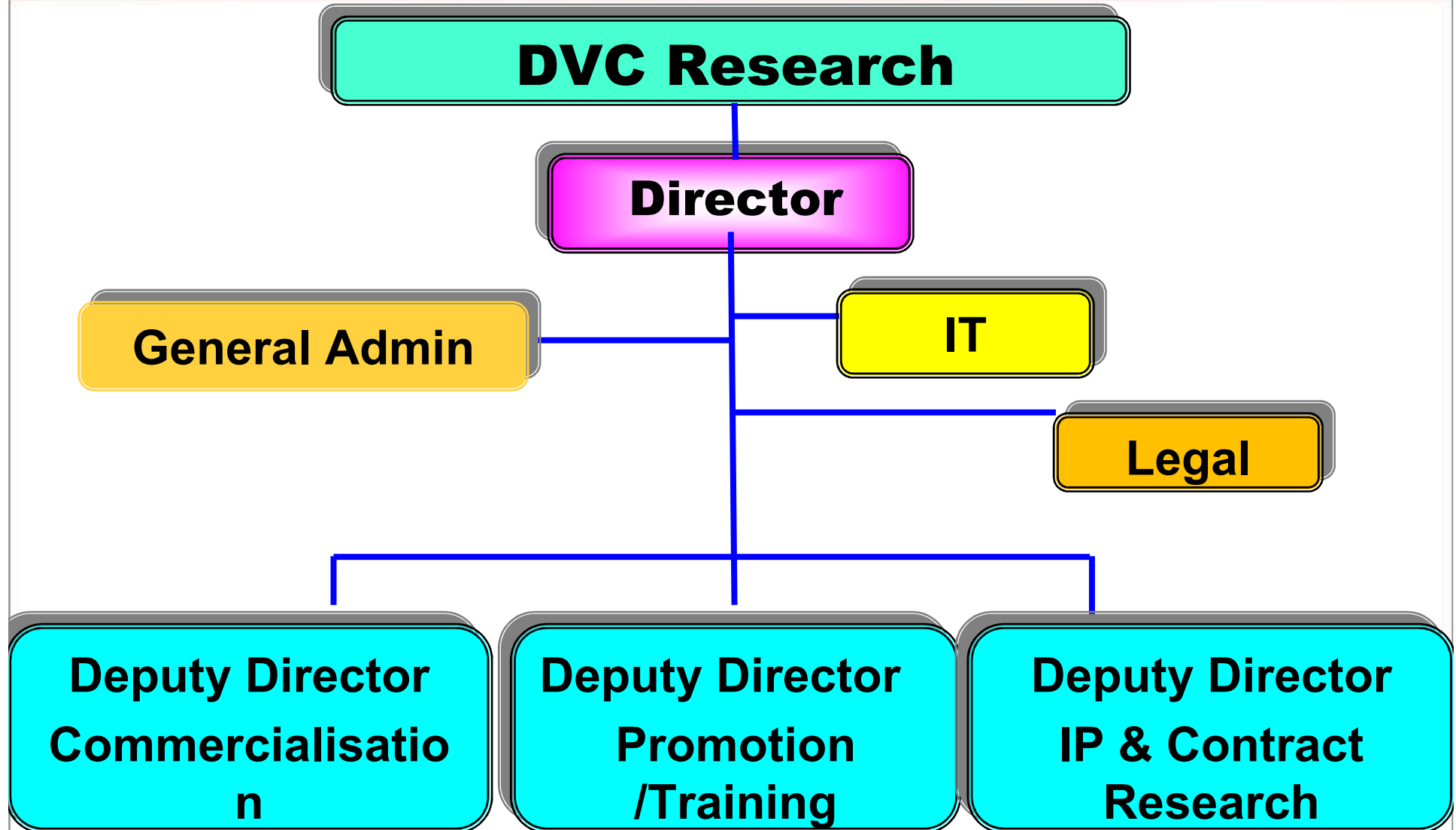


**support Innovation units**

**Pre – seed funding**

**Commer. output**

# TTO ORGANISATIONAL STRUCTURE





# Malaysia's S & T Policy for the 21 st Century

Programs include:

**Holding Co. to  
promote  
Commer.**

**Improve  
incentives for  
researchers to  
commer.**



# Sound research management practices

**Promote adoption of sound research management practices including:**

- ❑ IP management
- ❑ Commercialisation of research outputs in all Univ. & PRIs

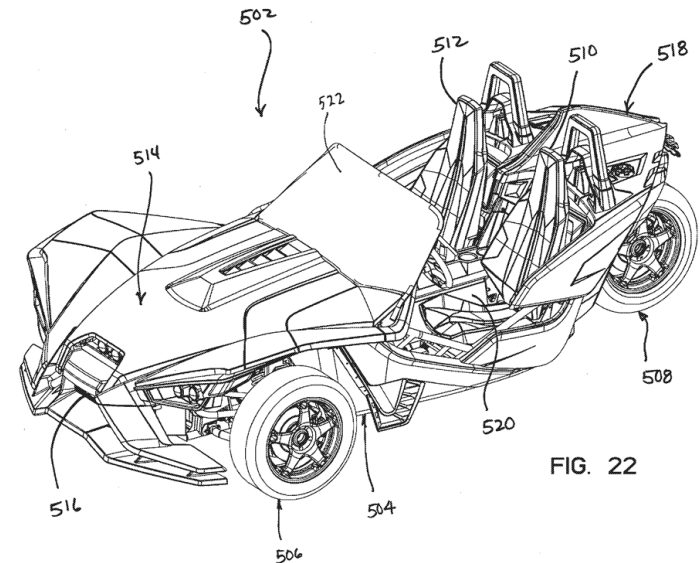


FIG. 22

# Management of IP rights

- Enhance management of IP rights including patent advisory & other services
- Review & develop new legislation related to IP policy
- Enact legal provisions to allow securitization of IP where IP rights can be used as collateral for loans



# Flexible staff scheme

- ❑ Univ./PRIs scheme for staff sabbatical to allow IP commercialisation
- ❑ No loss of seniority after staff return to join Univ/PRI
- ❑ Allow staff members to hold equity or become technical directors in spin-off company



# Promote techno-entrepreneurship

- ❑ Ensuring public VC capital funding & banking system for early seed financing & for technology development
- ❑ Introduce a more innovative mode of financing such as debt ventures funding with flexibility in lending facilities



# Wealth sharing guidelines

- ❑ Encourage & reward innovation & creative activity
- ❑ Administering IP rights in a manner that is equitable to all parties involved
- ❑ Share revenues from commercial exploitation of IP rights



**Better rewarded inventors will create more wealth for the nation**

# Wealth sharing guidelines

- Income from commercial of IP, divided between Recipient & Inventor(s)
- Recipient deduct all reasonable expenses before sharing revenue
- Recipient distribute the amount on closing of the financial year





# Revenue Sharing – Ministry of Science Technology & Innovation Malaysia

Net Revenue (Malaysian Ringgit = U\$0.32)	Inventor (%)	Institution
1 <sup>st</sup> 250,000 (US\$78,100)	100	0
Next 250,001 to 1 million	80	20
Next 1,000,001 to 2.5 million	60	40
Next 2,000,001 to 5 million	50	50
Exceed 5,000,001	40	60



# Incentives for invention

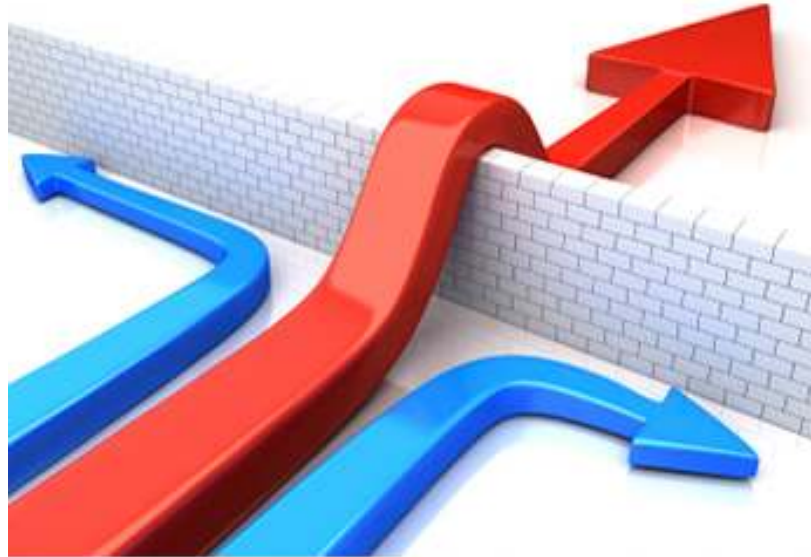
## Provide incentive schemes for Inventor(s)

➤ Upon Filing of Patent : **\$1,615**

➤ Upon Grant of Patent : **\$3,230**



# Challenges



# Nation's success

- Development & integration of bold policies**
- Restructuring tax & regulatory systems to become more competitive**
- Increase support for R&D**
- Introduce IP into education programs**
- Many other pro-innovation steps**

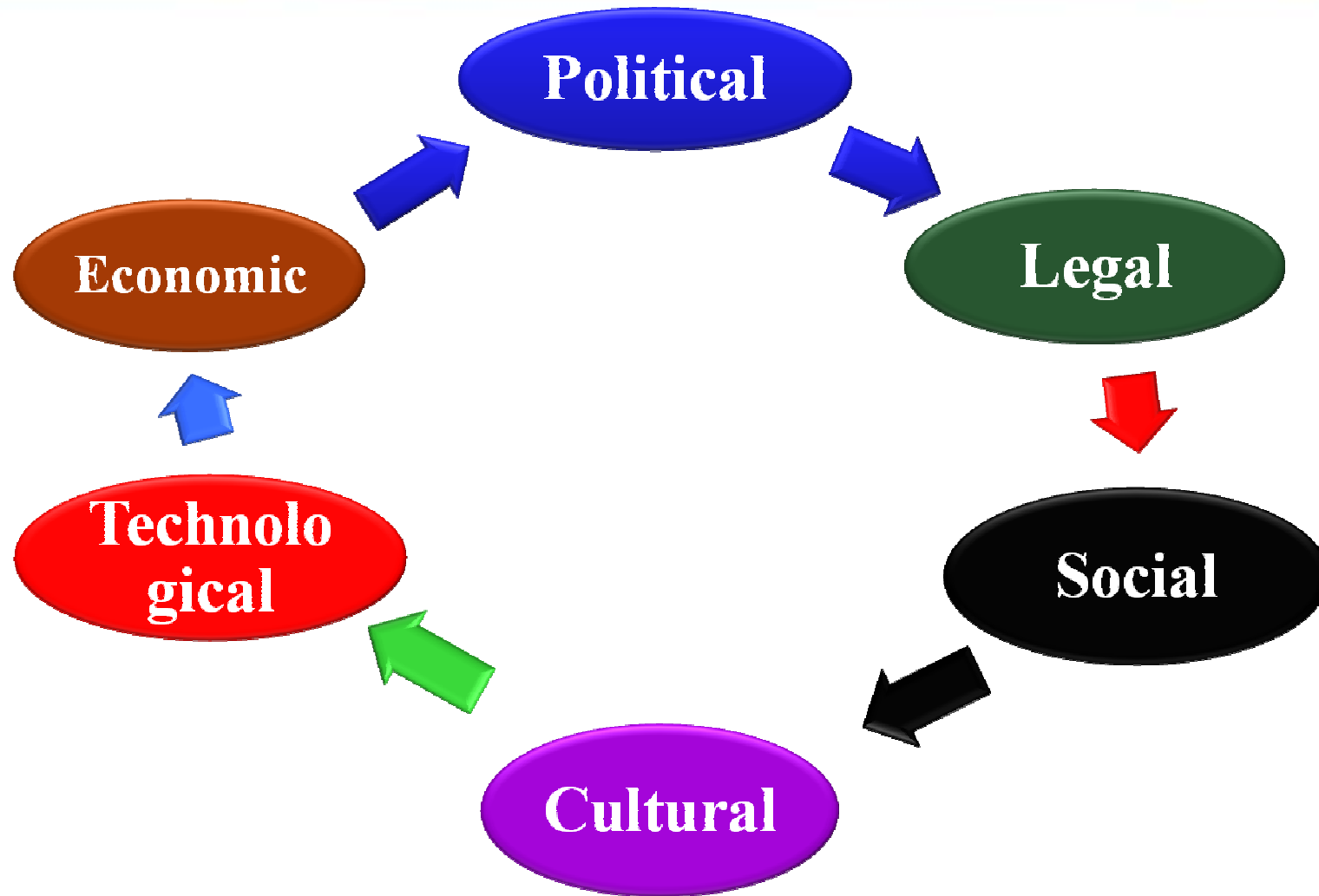
# No quick fixes

- **Innovation is still new & evolving**
- **Innovation culture takes decades to accomplish**
- **Short-term results difficult to demonstrate & to quantify**
- **Policy makers must recognise these facts & build flexible programs that takes time to mature & evolve**

# Awareness

- ❖ **Keep communications open so that every one know what's going on**
- ❖ **Involve policy makers & implementing agencies in awareness campaigns**
- ❖ **Awareness campaigns – Phase I**
- ❖ **Awareness campaigns – Phase II, III...**

# Barriers



# Kaizen

## Continuous Improvement

改善

kai  
"change"

zen  
"good"



**Nothing  
is  
impossible!**

**You can  
do it!**





**Asante**  
**sana**

