



Mohamed Shariff



☺ Universiti Putra Malaysia (Univ. Agriculture Malaysia)

☺ Academic qualification:

Fish/shrimp doctor ure,

➤ MSc & PhD University of Stirling, Scotland





UPM Faculties

- Agriculture
- Biotechnology & Biomolecular Sciences
- Computer Science & Information Technology
- Design & Architecture
- Economics & Management
- Educational Studies
- Engineering
- Environmental Studies
- Food Science & Tech.
- Forestry
- Human Ecology
- Medicine & Health Sciences
- Modern Languages & Communication
- Science
- Veterinary Medicine
- Agri. & Food Science

Total :
1

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University information

Research funds US\$ 90 Million 2006 – 2009

Academic staff No. 1,200

Student No. 30,000

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Patent 2009

Patents Granted

226 Patents Pending

Filed in foreign countries **69**

- China
- European
- India
- Indonesia
- Japan
- Philippine
- Singapore
- Switzerland
- Thailand
- Taiwan
- United Kingdom
- United States
- Vietnam

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Patent

2008 - 57 patents filed

Owner University

Academic staff & students Inventor



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UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

Organizational options for IP Management & Technology Transfer in Universities/PRI s



Mohamed Shariff Mohamed Din
Innovation & Commercialisation Centre (ICC)
Universiti Putra Malaysia

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Contents

- Why the need for IP management & Technology Transfer Office
- Organizational options for IP management & TT Office
- Role of IP management & TMO
- Skills required to manage IP & TMO
- Challenges in managing IP & TMO



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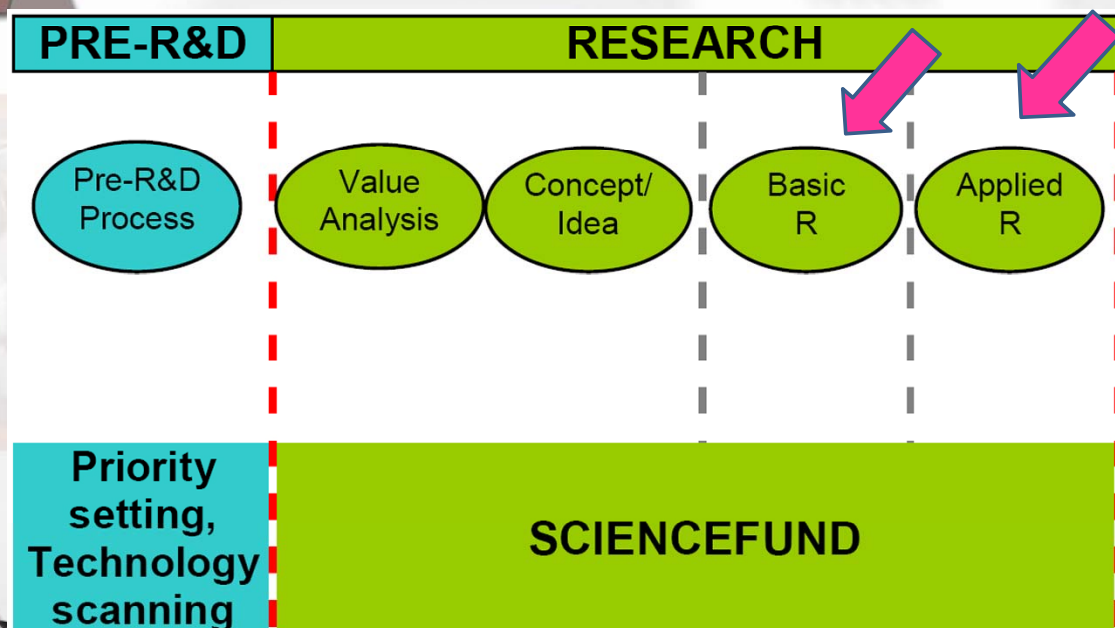
Past main research output

- Journal papers
- Presentations at seminars – national & international meetings
- Human resource development MSc, PhD



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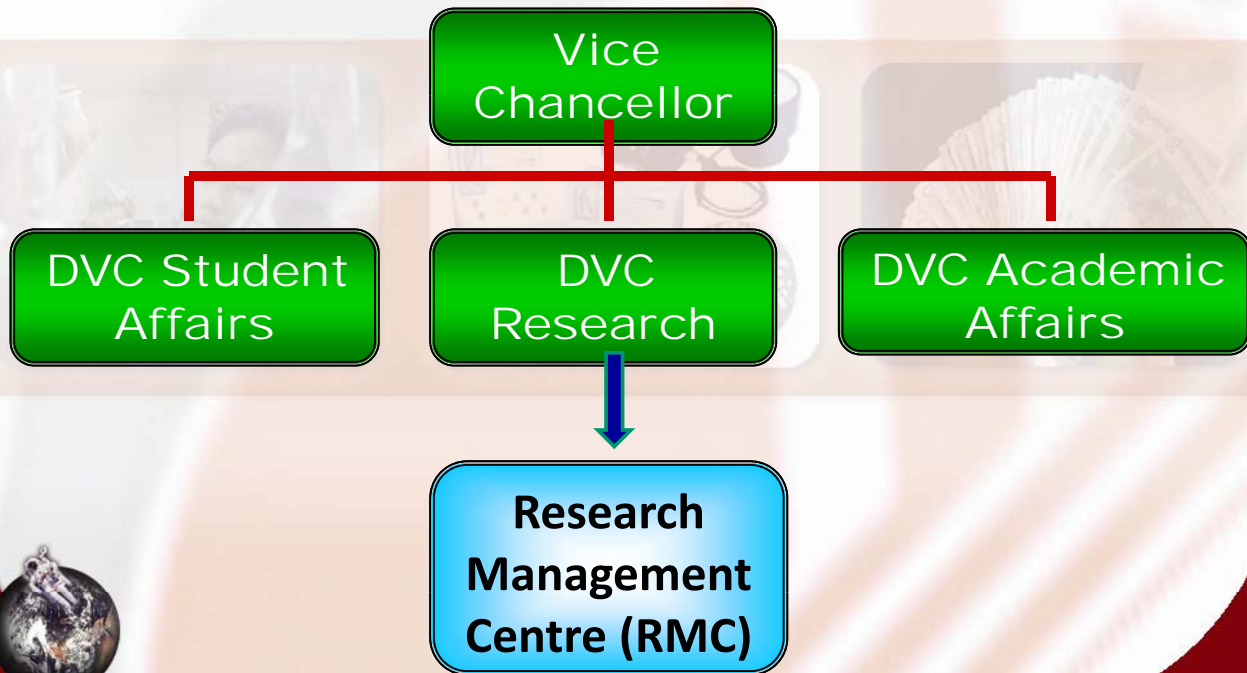
FUNDING



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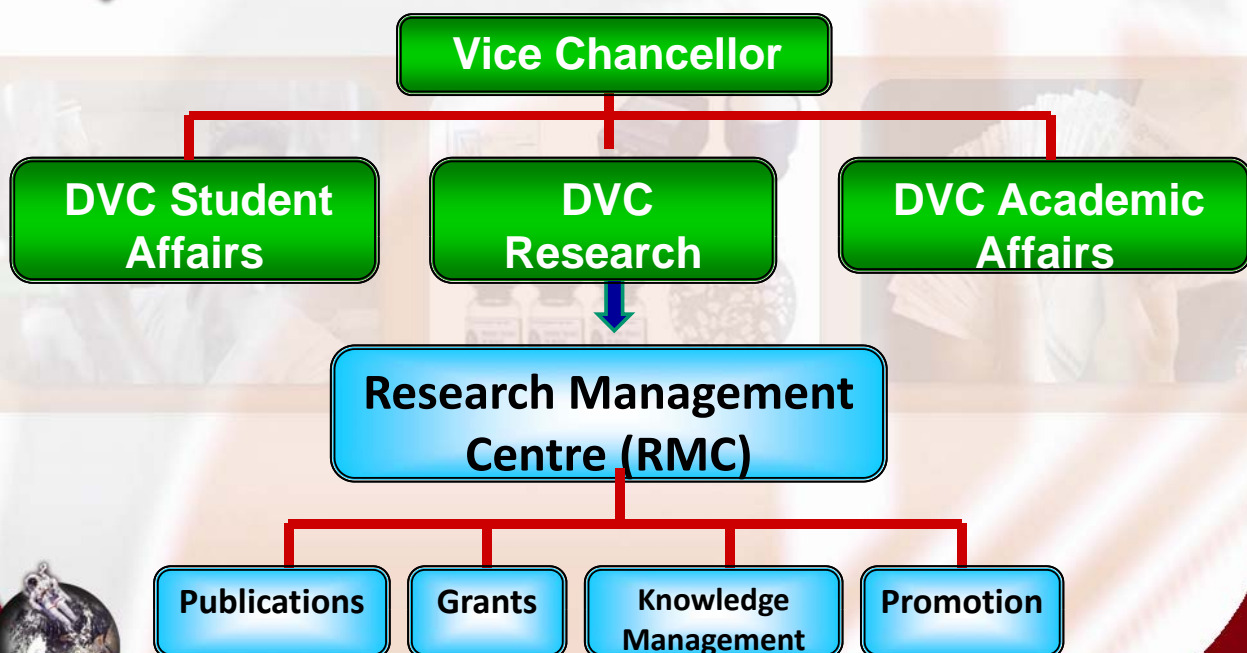
General Organization of Univ. Administration & Research Management



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General organization of Univ. Administration & Research Management



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The new era of IP Management & technology transfer

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Why the change - IP Management & technology transfer?

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Accountability Malaysian R&D Funds

Malaysia Plan	Year	Ringgit (million)
5	1986-1990	400
6	1991-1995	600
7	1996-2000	903
8	2001-2005	1413



MOSTI Annual Report 2004

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Accountability

❖ under pressure to show
results for funds spent on
R&D



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Competing with other universities

- ❖ **Research & Apex universities**
- ❖ **World class ranking**



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To support business & industry

- **To survive in business - manufacturers need a continuing flow of new products**
- **Co. need new products for growth**
- **Product life cycles are getting shorter all the time**



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Source of technologies - Univ. PRIs. & In house R&D



Nokia: Every 2 weeks – a new model

1.22 MB

1.44 MB

16G \$25

Computer diskette

GS ROM Grabber
version 1.0
Copyright 2000
Sarah Shepherd

diskGO secure



16TH
CENTURY
WALKMAN.



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Industries need new technologies

- ❖ Private sector still keep looking for technologies from advance countries
- ❖ We have world class scientist & innovations
- ❖ We need to be proactive in promoting our innovations



Engine for future growth

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Rich in Biodiversity



Our natural resources

- several commodities
- byproducts
- medicinal value

Some being patented by foreigners in other countries

Loss to the nation



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Globalization

Have to compete with the rest of the world!



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



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For Wealth Creation & Nation Building



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University Innovation Model

- Massachusetts Institute of Technology (MIT) best model for innovation: –

- MIT's charter directs Institute to Wealth

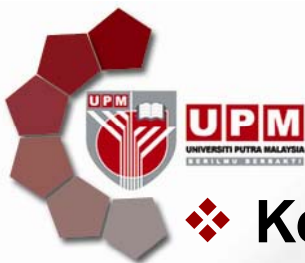
Wealth creation & Nation Building

- > 4000 companies founded overall
- Involvement in annual sales \$230B
- Created 1,100,000 jobs



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Contribution towards nation building?



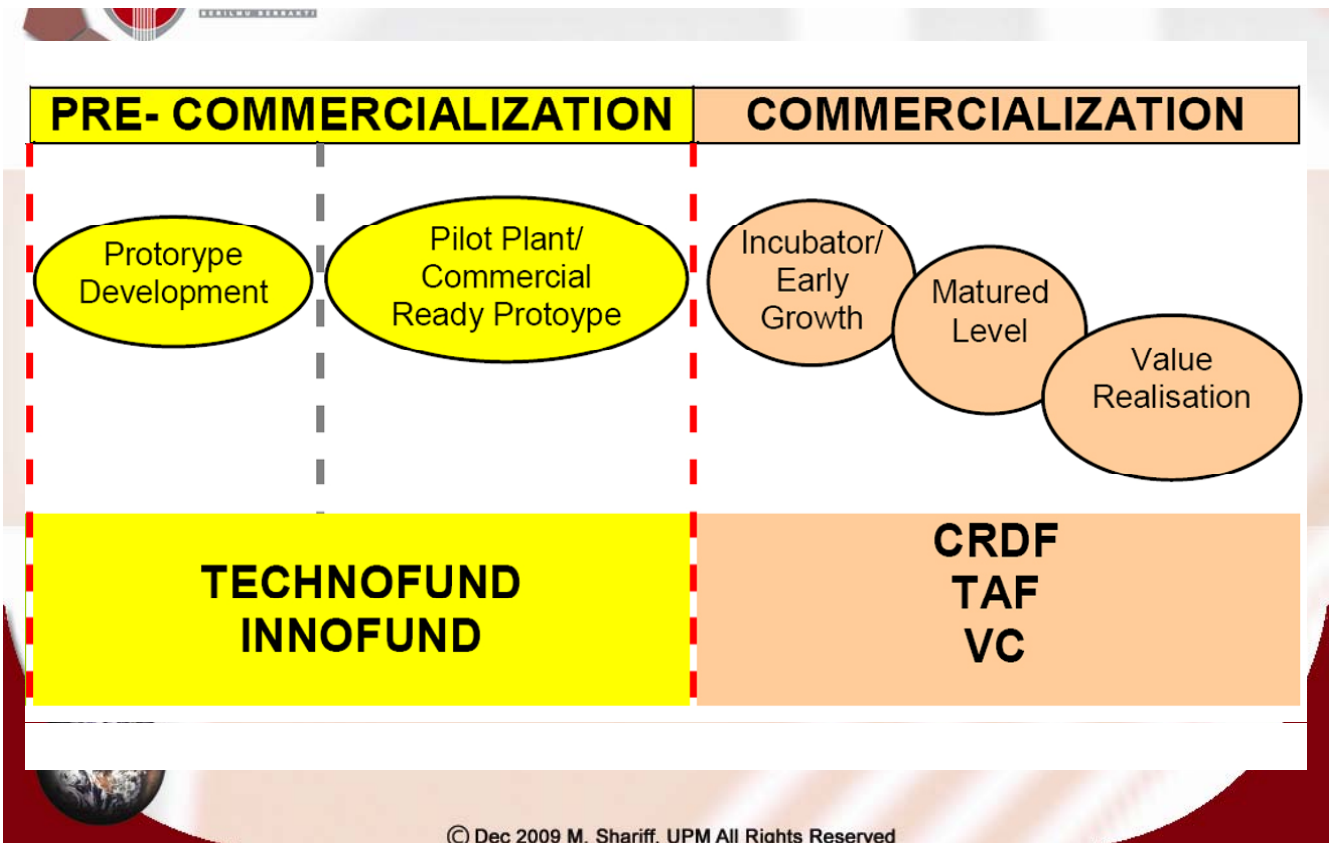
Innovation

❖ Key to productivity:

- Jobs
- Health
- Security
- Quality of life
- In US technological innovation responsible for 50% economic growth last 50 years



FUNDING



Past main research output

- Journal papers
- Presentations at seminars – national & international
- Human resource development MSc, PhD
- Few patents





Additional research output

More

- Patents
- Lab scale technologies
- Marketable products (prototype)

Paradigm shift required

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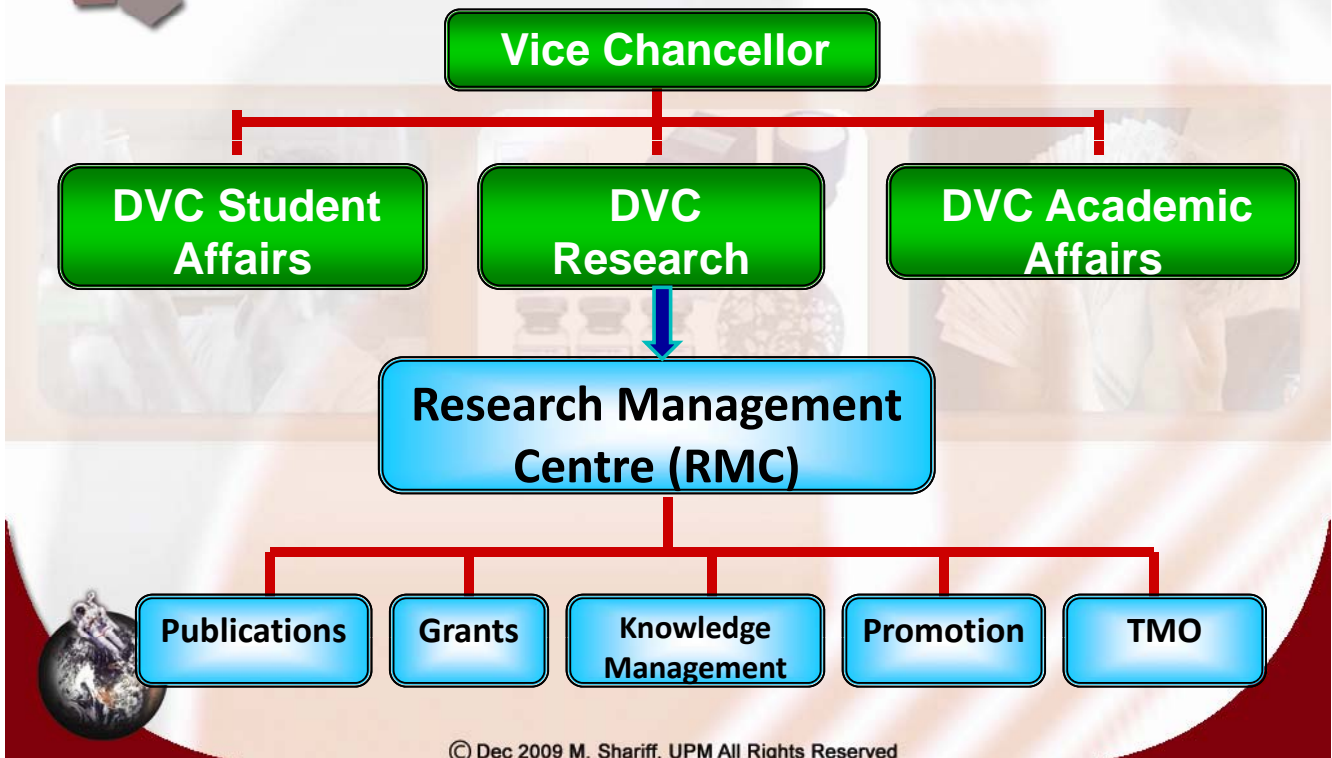


www.fundmap.co.uk/EKTN/assets/images/fundmap_pie.jpg

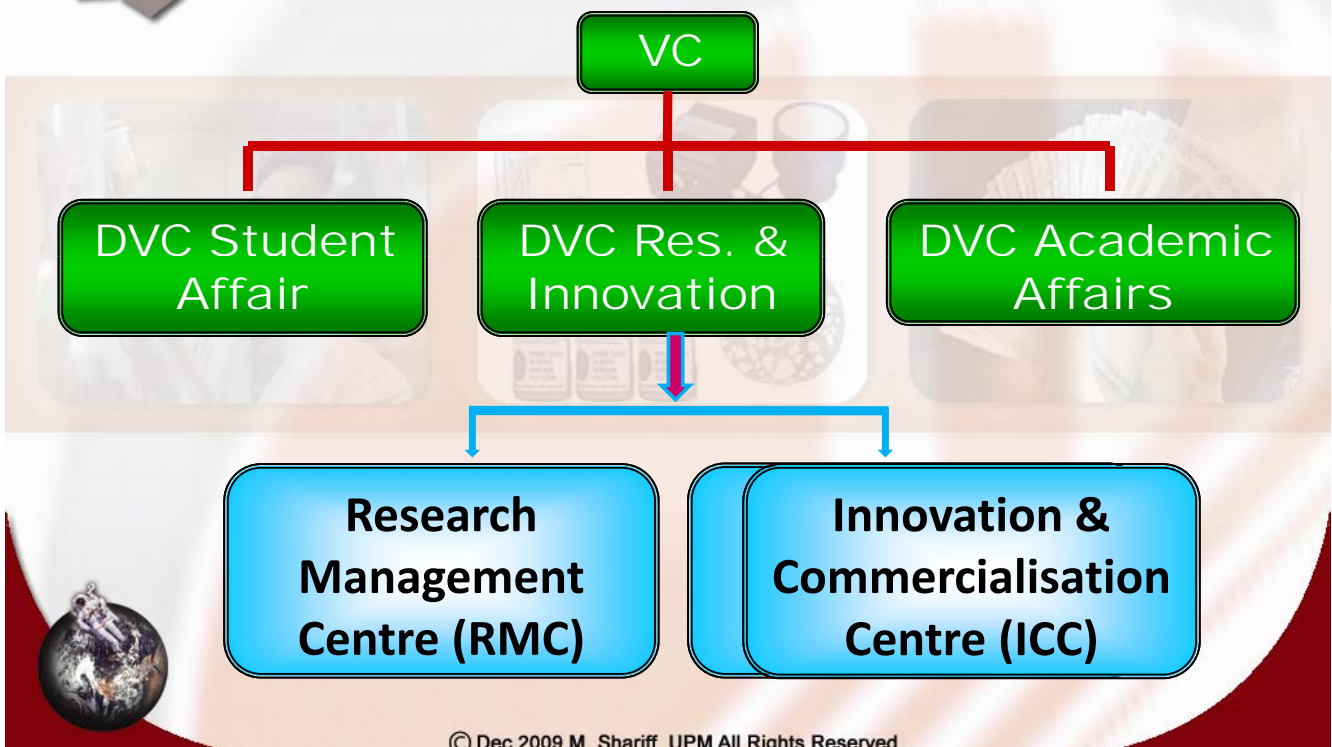
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Organizational Options for Tech. Management Office



Organizational Options for Tech. Management Office





Univ. Company

Private Holdings Company

- Centralised privatisation Co. of Univ
- consultancies
 - technologies
 - services
 - facilities

Univ. Consultancy Co.

Univ. Education & Training Co.

TMO



Univ. R&D Co.

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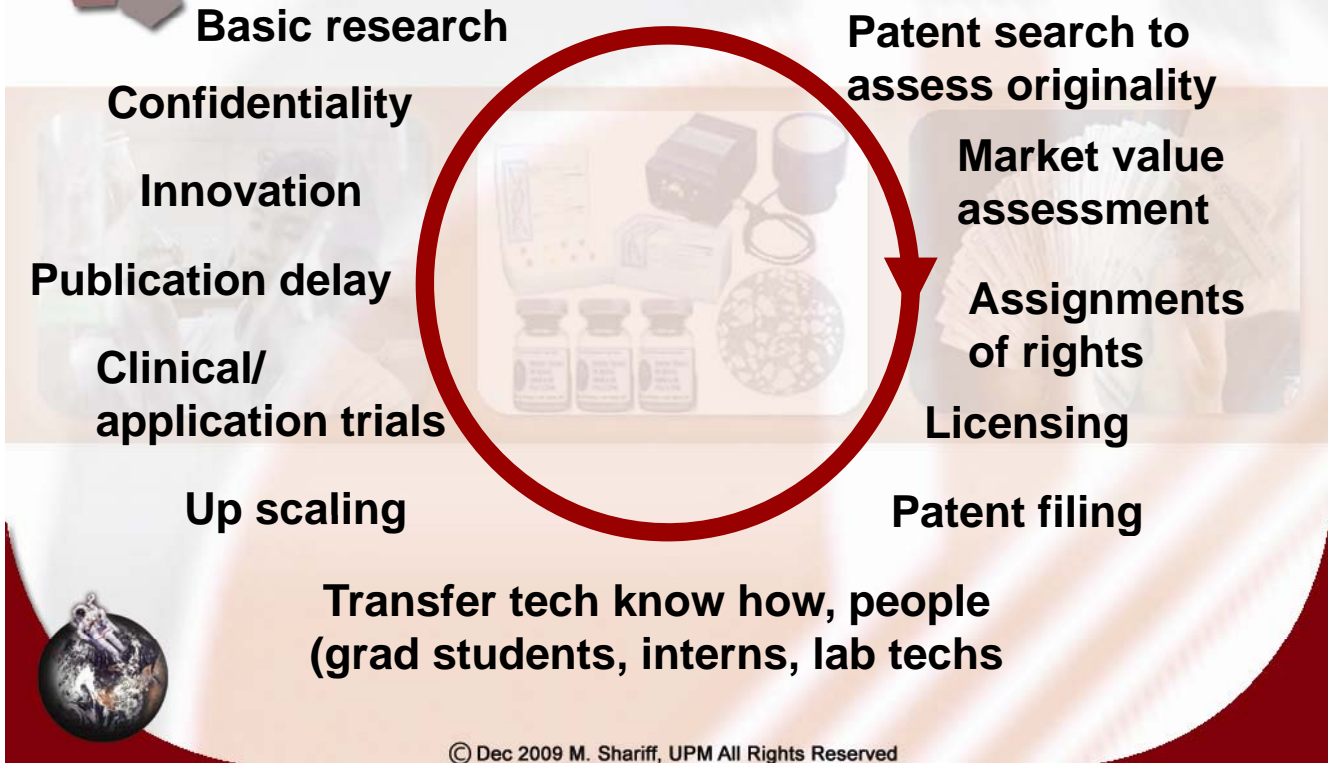
Functions of IP Management Unit & TMO



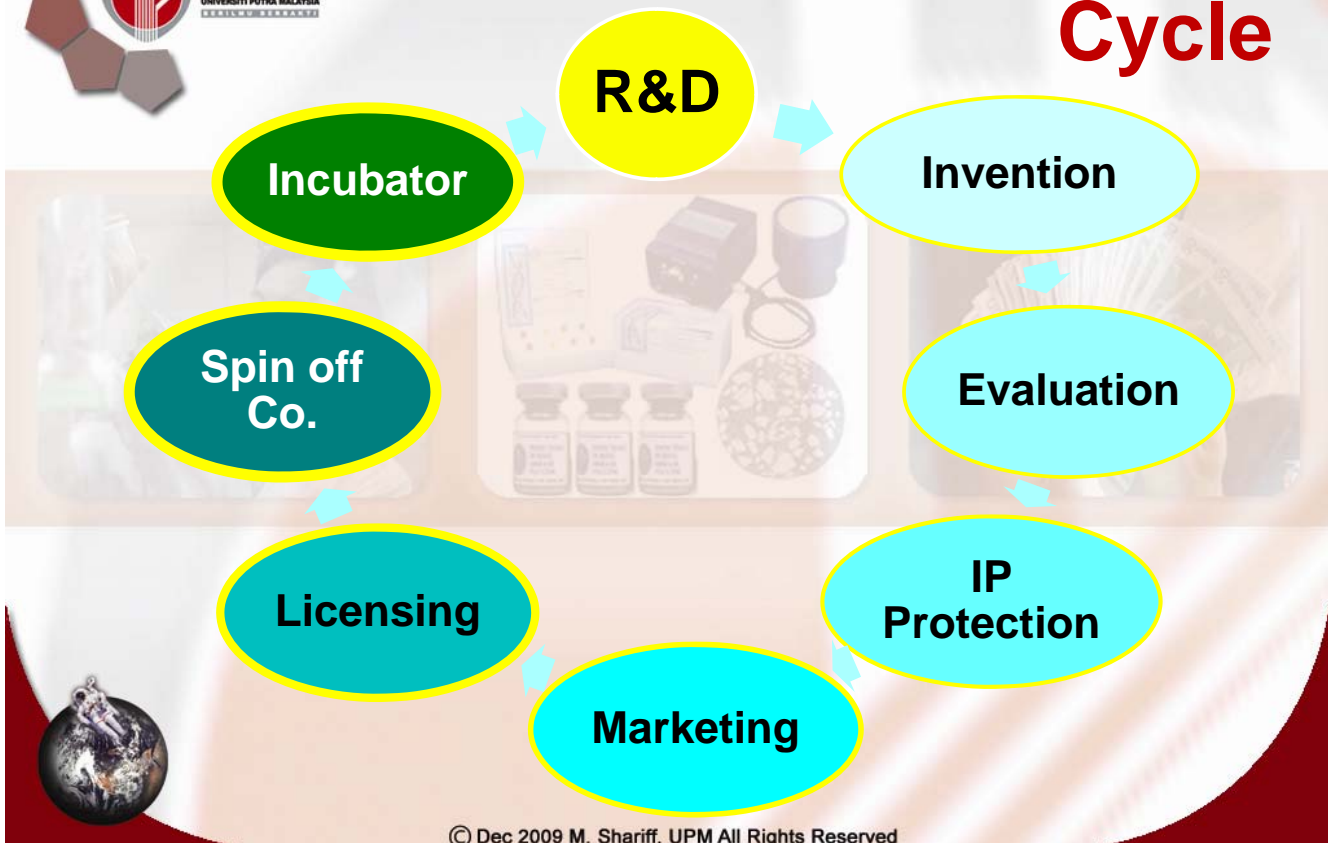
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Research to innovation cycle



Transfer Technology Cycle



Who are the clients?



Researcher's role

Researcher

Seminars

Meetings

Stressed

No experience in commercialisation or entrepreneurialship

Services

Consultancy

Teaching

Training researchers on all aspects of commercialization including IP protection



Awareness

- Still only focus on publishing papers
- Importance of commercialization?
- Contribution to nation building?
- Income they can generate for themselves & team!

IP & TT is a new culture in Univ. or PRI

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Awareness campaigns

Top management

- Vice Chancellor
- Deputy Vice Chancellors
- Registrar
- Bursar
- Deans
- Deputy Deans

Involve the total enterprise!

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IP & Commercialisation Course for Univ Top Management



2 ½ day course

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Awareness campaigns

- All academic staff
- Road show to all faculties & Institutes

Get a feedback

Motivation!

Role of TMO to synergise with researchers

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Road Show at Faculty

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Another client – the Private Sector

**Convince the Private Sector -
We have world class expertise &
technologies**

**Work together for a
Win - Win situation in a smart
partnership**

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Business Man seeking technology or research partner



Importer of products – Unfriendly terms

Identify team of local scientists X 4 meetings

Agree :

- **Collaborate to develop in house technology**
- **Form spin off Co. & have equity in Co.**
- **Apply for fund to upscale technology**

Sign non disclosure agreement (NDA)



Training – Technology Transfer

- Selected academic staff
- Have a patent or potential candidates
- At Univ. & PRIs

Building core of knowledgeable group

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**Advanced
Commercialisation Course**
Venue : Langkawi & Cherating



4 days X 2 programme



Management of Intellectual Property

IPs are hidden treasures!

Engine for future growth

Era of I Economy

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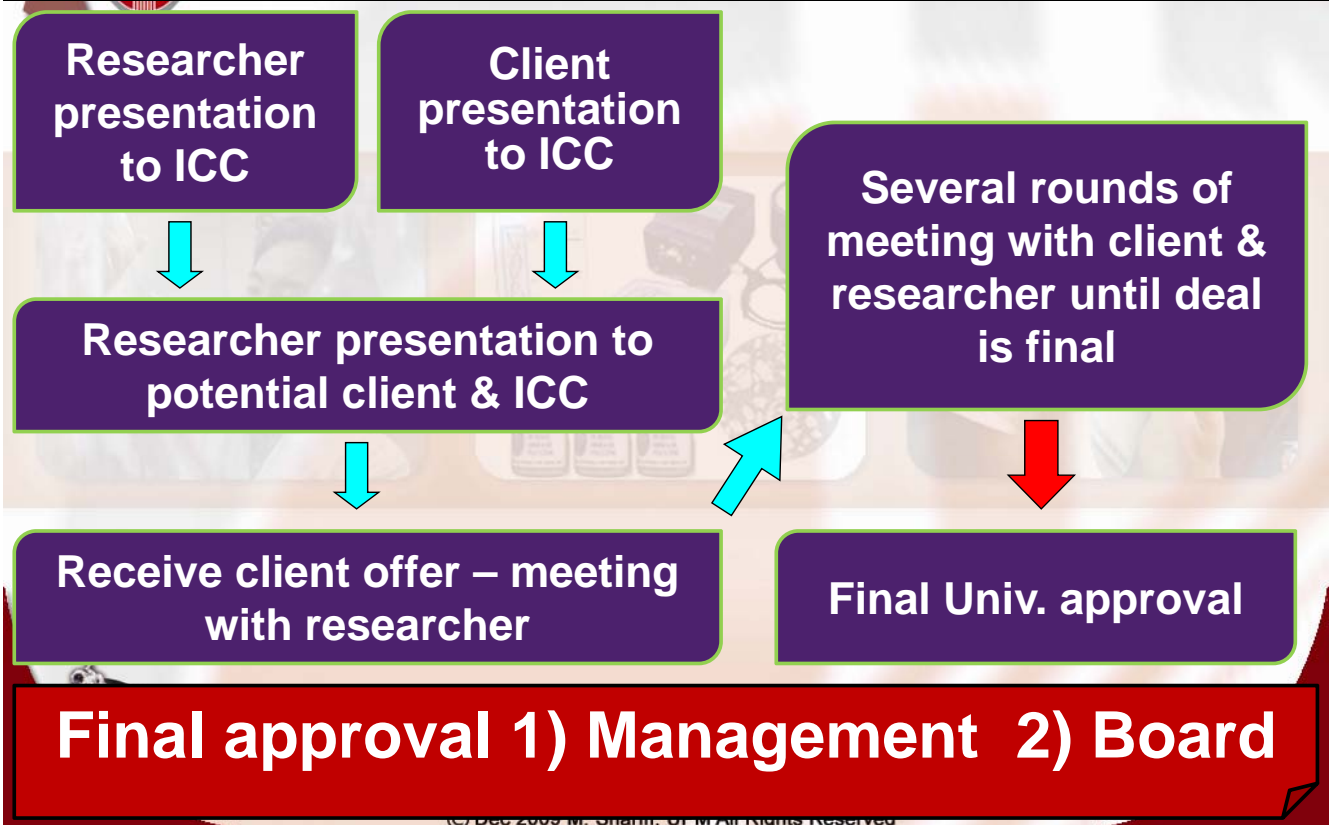
Disclosure & evaluation of technologies

Potential Applications:

	Potential Application
Military and Law Enforcement	Replaceable Armor inserts for bullet proof vest Armor panel for vehicle or mobile unit Panel for bunker and platform
Aerospace Industry	Bullet proof flight/cockpit deck interior panel Aircraft component
Automotive Industry	Ballistic resistant interior panels/bumper
Building Industry	

Meetings: i) Learn technology
ii) Approve/reject patent/copyright/TS
2-3 iii) Fine tune
iv) Add financial aspects

Commercialisation/Negotiation/ Match Making Process



Promotion/Marketing

<http://www.icc.upm.edu.my>

The screenshot shows the homepage of the Innovation & Commercialisation Centre (ICC) at UPM. It features a navigation menu on the left with categories like Intellectual Property Rights, Commercialisation, and Training & Event. The main content area includes a 'Welcome to INNOVATION & COMMERCIALISATION CENTRE Official Website' message, 'ICC'S Services' for both UPM researchers and external clients, and a 'Facts & Figures' section. The 'Facts & Figures' section contains the following data:

Category	Malaysia	Other Countries
Patent Granted	29	13
Patent Pending	199	31
PCT Filing	24	

This screenshot displays the 'Commercialised Product / Technology' page on the ICC website. It features a grid of product images and a central blue box with the text 'Commercialised Product / Technology'. The page lists various commercialised products and technologies, including 'Fiber Optic Evaporator Module (FOM)', 'MyJAZZ UPR02 180-voice', and 'Bacterium U4-4'.

This screenshot shows the 'Potential Products/ Technologies for Commercialised' page. It lists several potential technologies for commercialisation, such as 'Agriculture Technology' and 'Engineering Technology'. A central blue box contains the text 'Potential Products/ Technologies for Commercialised'. The page also includes a list of specific technologies like 'An Improved Sterilization Process to Increase Palm Oil Extraction Rate' and 'Production of Humic Acid and Humates from Compost'.

<http://www.icc.upm.edu.my>

UPM
UNIVERSITI PUTRA MALAYSIA

Date: Friday, 24 Apr 2009
[Home] [About Us] [Staff] [Contact Us] [Links] [Website Committee] [Feedback Form] [E-Cart]

Language: Bahasa Melayu / English

INTELLECTUAL PROPERTY RIGHTS
Patent
Trademark
Copyright

COMMERCIALISATION
Technologies & Products
Commercialisation Development Research in UPM

TRAINING & EVENT
List of Trainings & Events
Photos

DOWNLOAD
Forms
Others

UPM MTDC, Technology Centre
Universiti Putra Malaysia
43400 UPM Serdang, Selangor
No. Tel: 0389471286
[Download Map]

SKOP PENYELIDIKAN DAN PENGKOMERSIALAN

eGallery

Total Visitor: 29252

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Universiti Putra Malaysia and ICC shall not be liable for any loss or damage caused by the usage of any information obtained from this website.

UPM Patent Search

Cluster: Science, Technology & Engineering; Health; Food Technology; Agriculture; Forestry & Environment; Social Science

Search Results

Search Keywords: enzym

1) Title: Method of Recovering Squalene from Vegetable Oil Based Fatty Acid Distillate
The present invention provides a method for the recovery of squalene from fatty acid distillate obtained from vegetable oil refining without disturbing naturally occurring components in the distillate. According, the method of the present invention...

Inventor: Badriah Shari Bahari, Camille Chua Soo Leng
Patent Status: Pending Patent
Country Filing: Malaysia

2) Title: A Method for Producing Adipate Ester
The present invention relates to the development of a highly stable biocatalyst such as immobilized enzyme for the synthesis of high added-value esters. More particularly, relates to a method for producing a high quality and purified wax adipate ester...

Inventor: Bakar Salleh, Raja Noor Zailha Raja Abdul Rahman, Niaz Chahabish Langgoot
Patent Status: Pending Patent
Country Filing: Malaysia

List of UPM Patent

Cluster: Science, Technology and Engineering

No.	IP Title	Filing Country	Status
1.	Modular Stormwater Blocks	Malaysia	Pending Patent
2.	Recursive Mean-Separate Histogram Equalization Method	Malaysia	Pending Patent
3.	Video Surveillance and Security System	Malaysia	Pending Patent
4.	Three Point Auto High Dynamometer	Malaysia	Granted Patent
5.	Method of Vitamin E Recovery	Malaysia	Pending Patent
6.	Process for Producing Phytanthen Enriched Diacylglycerols	Malaysia	Granted Patent
7.	The Method and Apparatus for Degumming of Crude Palm Oil by Membrane Filtration	Malaysia	Granted Patent
8.	Compressed Natural Gas Fuel Injection System and Method	Malaysia	Pending Patent
9.	Nozzle and Seal Geometry for Direct Injection	Malaysia	Pending Patent
10.	LED-Based Schlieren Mirror System	Malaysia	Pending Patent

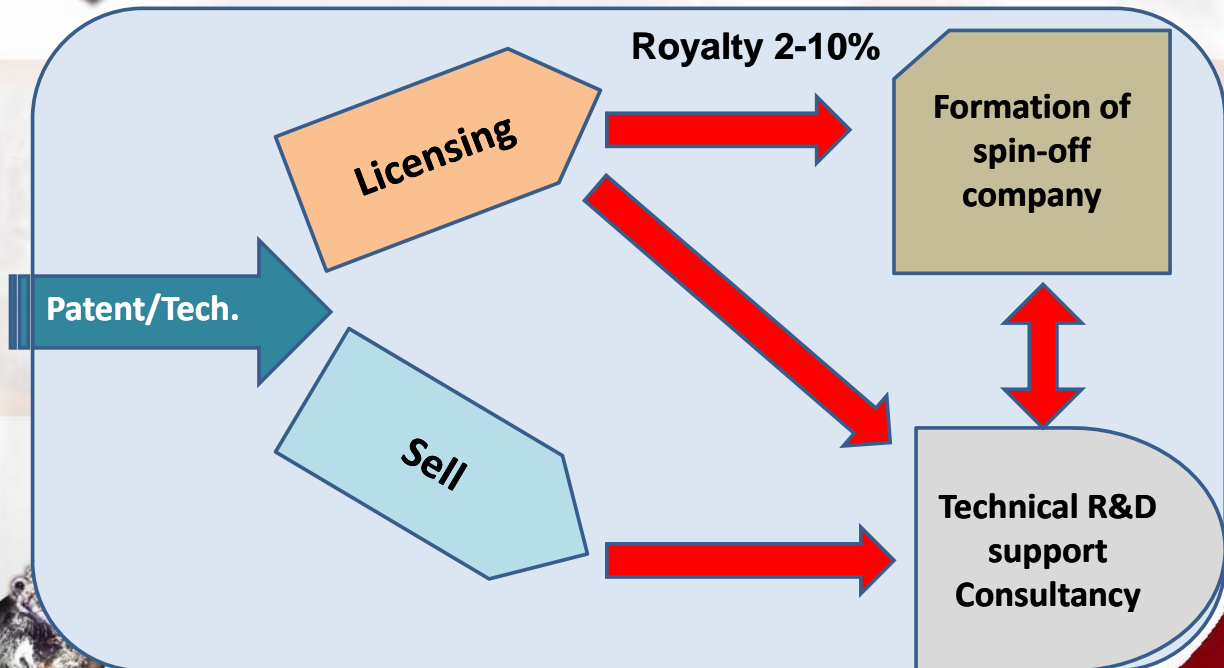


MODES FOR TECHNOLOGY TRANSFER





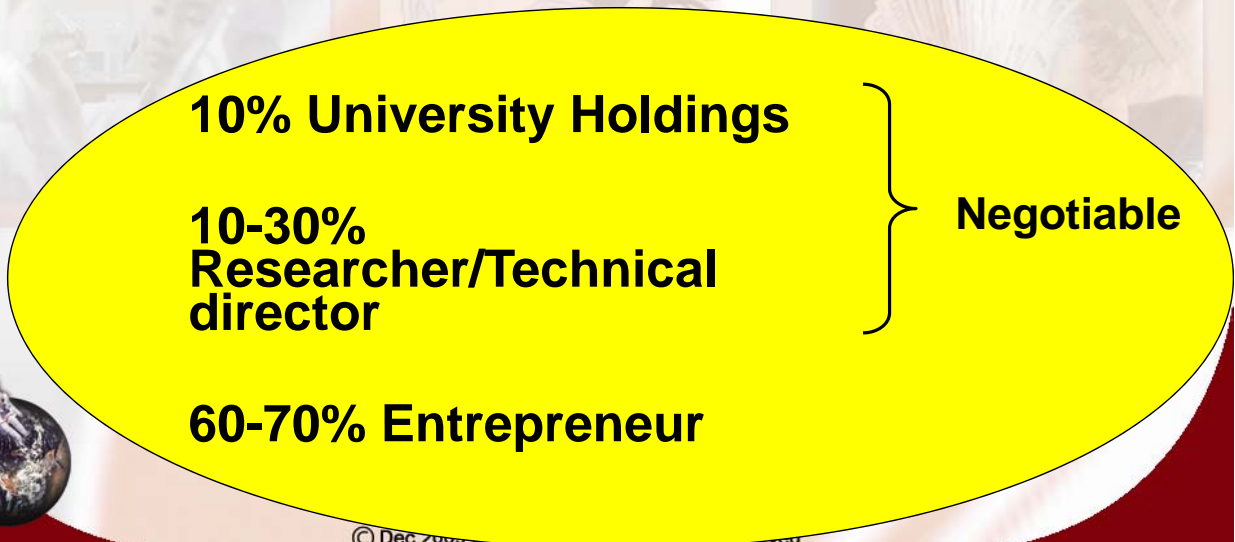
Modes : Technology Transfer



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Equity in Company



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UPM Equity for researchers

- **Benchmark of success with researcher's involvement**
- **Security for entrepreneur**
- **Sense of belonging for researcher – thus commitment**



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UPM Equity for researchers

- **Constant renewing of technology – forefront in market**
- **Assurance of quality control of product in the market**



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Commercialise the technologies



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UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

COMMERCIALISED *Products & Technologies*



Vita-Grow^R
RM 16.1 million



ZAPPA^R
GS: RM7.3 million



Fowl Pox Vaccine
GS: RM 2 million



NDV : V4-UPM
GS: RM 1 million



MyVAC UPM93
GS: RM 800,000



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Form SPIN OFF companies



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UPM's Spin-Off Company



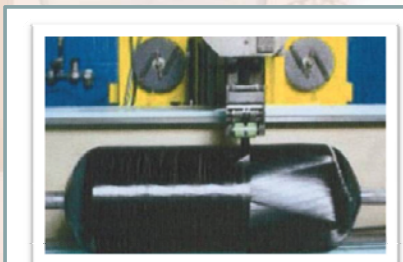
Orchid Life Sdn Bhd
Abd Razak Mohd Isa
Managing Director



**Putra Al-Mawashi
Genetics Sdn Bhd**
Haji Ridzuan Ahmad
Managing Director



Ecocillus Sdn Bhd
Dr. Abu Bakar Sade
Executive Director



**Advanced Composites
Engineering**
En. Azman Johan



**Bits, Nibbles and Bytes
Sdn. Bhd.**
Dr. Azma Abd. Hamid

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Policy making & procedures

- Introduce policy, draw up strategies & guidelines for TT
- Provide incentives
- Make it easy for academic staff to

Synergize with research staff & private sector to commercialize technologies

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TMO ORGANISATIONAL STRUCTURE

DVC Research

Director

General Admin

IT

Legal

Deputy Director
Commercialisation

Deputy Director
Promotion /Training

Deputy Director
Intellectual Property &
Contract Research

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ICC ORGANISATIONAL STRUCTURE - UPM

DVC Research & Innovation

1 April 2006

Director

General Admin

IT

Legal

Currently 29 staff

Deputy Director
Commercialisation

Deputy Director
Promotion /Training

Deputy Director
Intellectual Property &
Contract research

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TMO Divisions & functions

Commercialisation

Planning

- Business planning
- Business development
- Market research
- Garage/incubators
- Issues/Policy

Commercialisation

- Entrepreneurship
- Marketing
- 'Spin-off' Company
- Commercialisation grant
- MoU with Co.

Work with
Co.

Promotion/ Training

Promotion/Training

- Promotion
- Roadshow
- Training
- Public relation
- Branding
- Matchmaking

Work with
RMC

Intellectual property/Contract Research

Intellectual Property

- Patent
- Trademark
- Plant variety

Com Dev. Research

- Contract Research
- Technology transfer

Work with
RMC & Co.

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Innovation & Commercialization Centre

Mission

To create wealth-generation entities from R&D output for healthy nation building



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Skills required to Manage IP & Technology in Universities & PRIs



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TMO must have trained staff



Have the right expertise!

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ICC Staff Training

2006

No	Training
1	Successful Technology Licensing Course
2	WIPO Nat. Symp. on IP Education, Training & Research
3	JPO/IPR Training Course for IP Trainers – Japan
4	Asia Pharmaceutical-Biotech Partnership Forum – Singapore
5	Impact of the PCT on Malaysian Business
6	Commercialization & Globalisation of Univ. IPR
7	Program on Tech. Licensing for ASEAN Countries – Taiwan
8	WIPO Regional Workshop on Patent Drafting – Singapore
9	'Negotiating Skills for IP-Related Tech Transactions' – Singapore
10	Measuring R&D & Developing Innovation System In An Institution of Higher Learning

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No	Training
1	21st Inter. Conf. on Business Incubation - Seattle USA
2	Patent Application Workshop
3	Training Course Advanced Commercialisation
4	Copyright for Music & Other Related Industry
5	WIPO / IDB Regional Seminar for Arab Countries on IP and Transfer of technology - Riyadh, Saudi Arabia
6	APEC: Seminar on Bringing Ideas to Market
7	Stimulating Innovation, Entrepreneurship & Competitiveness of SME Through Technology Incubation
8	World Innovation Forum 5
9	21st Century Marketing -Philip Kotler
10	ICOSTAM Best Practise in R&D Management: Succes Stories

No.	Title
1	Bullet - proof Patents & patent Strategy
2	Innovation in Higher Education
3	Technology Commercialisation
4	Workshop on MTDC Commercialisation Bootcamp
5	MIM Certified Professional IP Manager
6	Pengkomersilan Harta Intelek
7	National Technology Transfer managers Program
8	WIPO Asia Pacific Regional Symposium - Protection & Enforcement of IPRs in Combating Counterfeiting & piracy
9	Copyright & Access to Knowledge



Thanks to WIPO!

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CHALLENGES



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Challenges

1. The TT/ commercialization/ business is a new culture in Univ. & PRI
2. Scientist not aggressive in marketing themselves & their products
3. The private sector still skeptical – of local inventions



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Establish a one stop centre for TT

- Patent Management
- Up scaling, enhancing technologies, testing pro type – R&D
- TT/Commercialisation



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Avoid overlap in functions

DVC Research & Innovation

Vice Chancellor

Research Management Centre (RMC)

Technology Management Office (TMO)

University Business Centre (UBC)

Overlap in functions?



Challenges

Work within the government system

➤ New – unclear policies

New leaders – different vision





Slow

➤ Approval from various levels

Legal

Management

**For private sector –
time is money**



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Unclear policies

➤ Unpredictable changes

➤ New leaders – different vision

**Private sector – loses trust
with the institution**



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Best Case Scenario

- Good scientist – novel innovations should generate good income
- Novel technology can sell for a few million
- Some universities give 90% to researcher

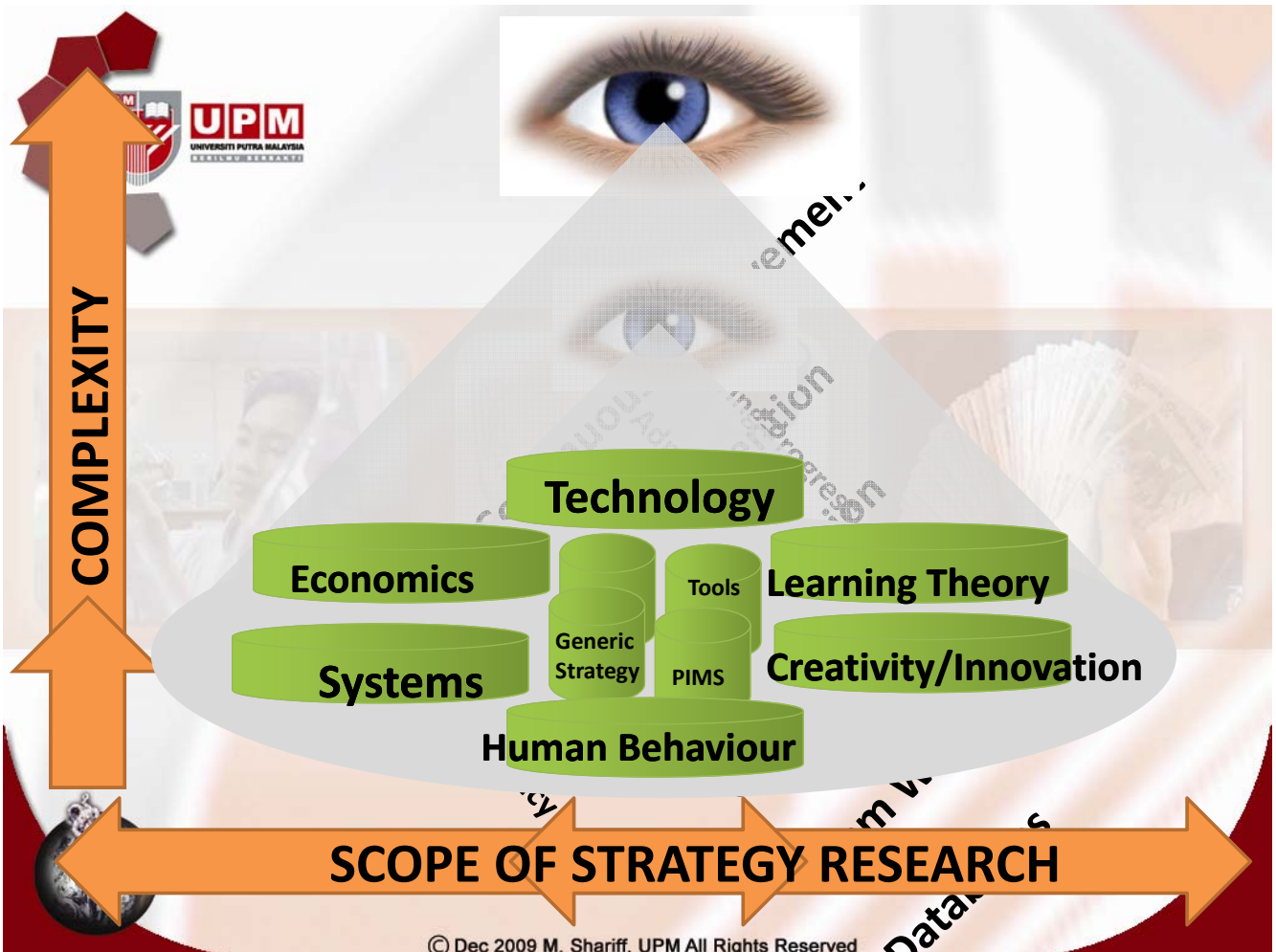
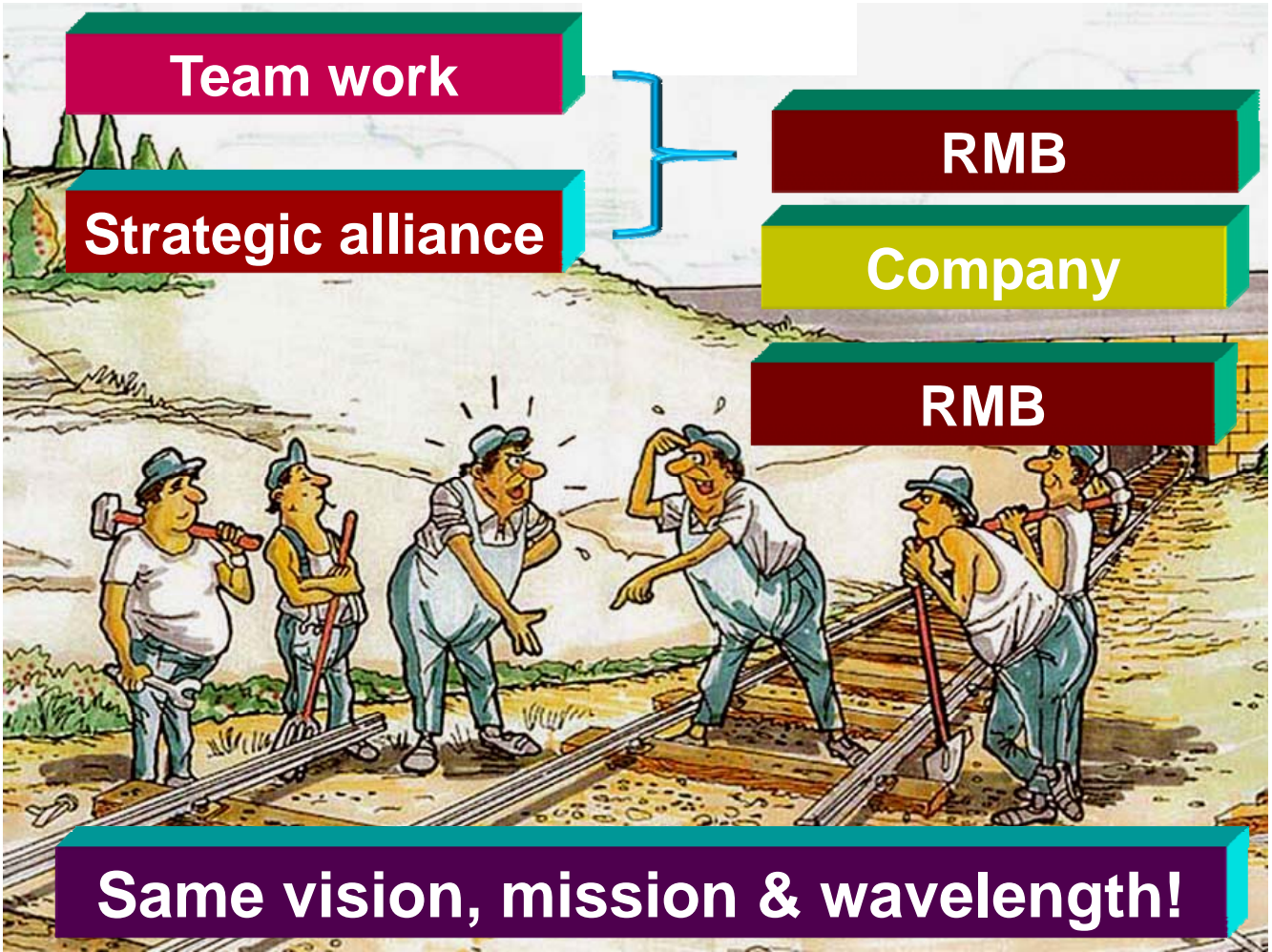
Manage these good scientist well!



Strategies for Successful Commercialization

- ✓ Identify selected technologies for up-scaling
- ✓ Promotion & marketing activities
- ✓ Links with industries
- ✓ Evaluate possible investors
- ✓ Protection of IP rights
- ✓ Legal support e.g. ownership of IP & documentation







**Whatever you
do, do it with**

Passion



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Bohoma Stu-Thyi





Oil Palm

