All about....

Knowledge & Technology transfer
Mode of Knowledge Transfer

• Consultancy.
• Extension – Normally undergrad student involvements. To engage community
• Contract Research – Share of IP
• **Technology transfer**
  • Technology licensing – Royalty, fees
  • Know how Licensing – akin to consultancy, but with IP jointly owned.
  • Out right IP sales
• Lab Services – Performance test, analysis
Technology transfer is the process of transferring scientific findings from one organization to another for the purpose of further development and commercialization. The process typically includes:

• Identifying new technologies
• Protecting technologies through patents and copyrights
• Forming development and commercialization strategies such as marketing and licensing to existing private sector companies or creating new startup companies based on the technology

http://autm.net/Tech_Transfer.htm
Academic and research institutions engage in technology transfer for a variety of reasons, such as:

- Recognition for discoveries made at the institution
- Compliance with federal regulations
- Attraction and retention of talented faculty
- Local economic development
- Attraction of corporate research support
- Licensing revenue to support further research and education
USA Scenario

From 1996 to 2010, the economic impact of university and nonprofit patent licensing was

$388 billion on the U.S. gross domestic product

$836 billion on the U.S. gross industrial output

Source: www.autm.net
• 1996-2000, 3 million jobs were created because of university non-profit patent licensing.
• Since 1980, universities have spun off more than 4,000 start up companies, 818 were launched in FY 2013.
• IN 2013 – 719 new products were introduced, by universities, to the market.
• Over the past 30 years, 153 new FDA-approved drugs, vaccines or new uses for existing drugs were discovered through research carried out in public sector research institutions.

Source: www.autm.net
Technology transfer Process

@2023 UPM

Industry Issues

- Time too long, lots of red tapes
- Too Expensive
- No confidence in innovativeness of univs
- Pace of development globally too fast, obsolescence becomes an issue
- Weak protection of IP, infringement too rampant.
- Researchers don’t understand the industry.
University Issues

• R&D for Industry driven innovation too short a time
• Too little being paid
• Investors are risk averse, not the right attitude to bring innovation to market.
• Investors insist on information mass production cost which simply doesn’t exist prior to upscaling.
• Investors looking for product ready to jump of the shelves, where as upscaling need investment too
Transfer Problems

• Lab scale is different from industrial scale. Larger Machine, larger batch processing, different results
• Feasibility of innovation is not there in the beginning. Economy of scales is an issue.
• Risk is high during ‘valley of death’ phase.
• the period of time from when a startup firm receives an initial capital contribution to when it begins generating revenues. During the death valley curve, additional financing is usually scarce, leaving the firm vulnerable to cash flow requirements.
Government assistance realizing the need to traverse the valley of death

- CRDF – by MTDC - CRDF funding of commercialisation of locally developed technologies by Malaysian owned company. Formation of ‘Syarikat Terbitan Unviersity’ (Spin-off)
- Cradle Fund - MoF– 150m – technology investors.
- PPRN – 50m – Solving industry problems.
- Technofund
Know how Licensing

• Akin to Consultancy, but involves tangible outcome – Guidelines, Drawings, Manual etc.

• Resulting in Intellectual Property

• IP will be shared.

• Eligible for further development from various internal and external funds – e.g. Precomm fund, Technofund, Cradlefund. Etc

• Joint venture with researcher to create new startups- eligible for Innohub program in UPM

Benefit of having IP with the University

• IP – Intellectual property in the forms of Patent, Trademark, ID, Plant Species, copyright.
• Protection by the University
• Spin off with various financial assistance
• Promotion and marketing by University
• Eligible for various internal and external funds
Role of Technology Transfer Office

- Technology Transfer Office (TTO), Technology Licensing Office (TLO)
Technology Transfer Office (TTO)

- Unit/Department responsible for commercializing University’s IP
- Protecting, Promotion, Commercialising
• UPMs TTO
• UPM has 1,600 Protected IP
• Patent, ID, Copyright, Trademark
• Commercialised 79 technologies, gross revenue RM40M
Intellectual Property Division

- IP evaluation meeting, Weekly average 16 proposal
- Work closely with MyIPO, WIPO
- Maintenance of protection close to RM2M/year
Commercialization in UPM

- Total IP > 1500
- IP commercialized = 78
- Gross Sales > RM 39.5 millions
- Income > RM3.96 millions
Promotion

- Exhibitions
- Roadshows
- Press Conference
- Innovation open day
Engagement with Industry

• Lab visits
• Discussion with researchers
• Business Matching
• Pitching Sessions
"If you do not seek out allies and helpers, then you will be isolated and weak." - Sun Tzu, "The Art of War"

- To raise Innovation champions from each faculty
- To provide innovation training for ICs
- To discover and inspire innovation at Faculty / Institute level
Innovation Champions

Looking for new innovation for your business?

Thousands of exciting new technologies

Come & Meet them!

www.upmioc.my

T: +603-8947 1254  E: promosi@upm.edu.my

Come and see UPM’s new R&D products from various fields of innovation. We have new solutions for various industries such as consumer products, health and beauty, medical, engineering, agriculture, design, manufacturing, ICT and many more. One of these would surely help propel your business to new heights with exciting new products and processes.

Our innovation team will be your guide to choose from a vast array of technological solutions. You will also have the opportunity to meet the researchers behind each new technology. Come and meet them at our series of Innovation Open Days. See you there.
Innovation Open Day
Have a look at our technologies

- [http://sciencepark.upm.edu.my/innotech#innotech](http://sciencepark.upm.edu.my/innotech#innotech)
Have a look at our technologies

- [http://www.upmip.upm.edu.my/](http://www.upmip.upm.edu.my/)
Companies need to innovate to compete

"We are what we repeatedly do. Excellence, then, is not an act but a habit"

Aristotle
Cost of innovations producing IP

1) Cost of innovations producing IP

2) Patent filing

3) maintenance + granted time
A = Cost to produce IP by Industry
B = Cost to produce IP by University

A < B : Not worth taking up
B < A : Worth taking up
A = B : Discuss / Negotiable
Summary

• Bringing Technology to Market is heavy task, but the return are high.
• Role of TTO is to facilitate the process reducing friction between parties.
• Each situation is unique but processes are similar.
• Universities and Industry need to embrace new paradigm when taking a technology to market.
• Industry need to highlight needs and problems.
• University need to be responsive to market dynamics.
• More engagement are needed.