

5 - Future of S&T

- Philippine Development Plan 2017-2022, NEDA
- Harmonized National Research and Development Agenda 2017-2022
- National R&D Agenda
- "The scientific culture requires us to live an effort of thought" - Gaston Bachelard, Le rationalisme applique

Tech Transfer Process

- Research and innovation generation
- IP and Market Evaluation
- IP Protection
- Startup or Licensing
- Post Deal Management

Technology and Intellectual Property Rights (IPR)

How is IPR as an issue related to science, technology, and society? Why is this important?

Recall: the information/technological wave

- digital technologies
- more emphasis on research and development, innovation and invention

Ease of production

Back then: Vinyl, VHS tape, cassette, CDs

Now: Digital albums, Spotify

Ease of Storage

- Storage is getting cheaper, from kilo to mega to gigabytes
- Google Drive

Ease of Dissemination

- Instead of paper, data and information may be spread digitally (and papers can be scanned)
- P2P Connections, Bluetooth, WI-FI

Creations as Properties?

- Intellectual property is a generic term that refers to intangible objects which acquire their value primarily from creative efforts, e.g.:
 - Literary works, artistic productions, scientific discoveries, plans for inventions and designs
- "Intellectual property rights are the rights given to persons over the creations of their minds. They usually give the creator an exclusive right over the use of his/her/their creation for a certain period of time" - World Trade Organization
- IPR manifests in all three kinds: Trademarks, patents, copyrights

Trademarks

- A word, phrase, symbol, or design that identifies and distinguishes a product from another

Copyrights

- Rights given to creators of original literary, scientific, and artistic works
- Can apply to any creative/original work

Plagiarism

- Uncredited use (both intentional and unintentional) of somebody else's words or ideas.
- Unquestionable: Buying, stealing or borrowing a paper; hiring someone else to write your paper; copying large sections of text from a source without quotation marks or proper citation
- Gray area: close paraphrasing, building on somebody else's ideas (so citation is important!)

Patents

- Rights over the manufacture, use, and marketing of inventions

Free-riding problem

- Product available to all
- Inventor receives minimal profit
- Inventors lack incentives to innovate because of low ROI

Secrecy Problem

- Product processes not shared
- Higher production cost
- Inefficient use of resources in "reinventing the wheel"
- Inventor is given monopoly -> compensation
- Monopoly is for a limited amount of time -> innovation

NOTE: Patents can also cover ideas, designs, and plans that have never been produced.

Brief History

- Recognition of rights of inventors to their inventions
 - 1300s in England
 - 1400s in Venice
 - 1700s in USA
 - 1789 in France
- 1710 -> Statute of Anne - modern concept of copyright based on this document
- 1886 -> Berne Convention - international recognition of copyright
- 1994 -> Trade-related aspects of Intellectual Property Rights (TRIPS) - International IP agreement