Role of Intellectual Property in Science, Technology and Development

Workshop on Technology for Development: Innovation Policies for SDGS in the Arab Region - Amman, 15-19 April 2018

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The World Intellectual Property Organization

- International intergovernmental organization with 191 member states, 1300 staff from 120 countries administering 26 treaties. Based in Geneva.
- Support governments, businesses and individuals make IP work for innovation and creativity
  - Making international IP laws (treaty making)
  - Some of these treaties deal with facilitating the obtaining of rights (PCT, Madrid and Hague)
  - Make IP information more accessible (databases)
  - Make IP work for development

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Outline

1. What is intellectual property?
2. Taking an idea to market- the IP implications
3. IP in the innovation system
4. Challenges in developing countries
5. How can WIPO help?
    a. Policy makers
    b. Research
    c. Innovative SMEs
    d. IP education
6. Discussion

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1. WHAT IS INTELLECTUAL PROPERTY?

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Business identifier

Publicity, catalogues (artwork, text)

Trust

Confidence

Reputation

Reliability

Attractive shape and design

Technical improvements

Quality

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Intellectual Property and Competitiveness

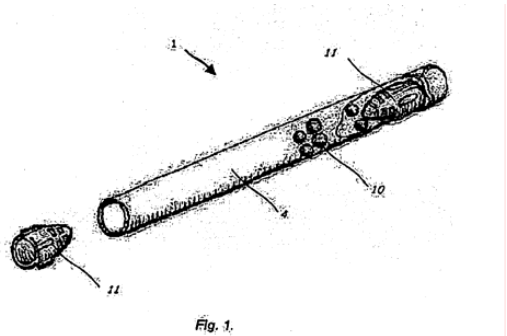
- The IP system provides **exclusivity** over the exploitation of innovative products and services, creative designs and business identifiers
- Through the IP system certain intangibles have acquired a certain “tangibility” by virtue of proprietorship and the ability to exclude others
- That is an owner of IP has the right to prevent anyone else from using and exploiting the IP right

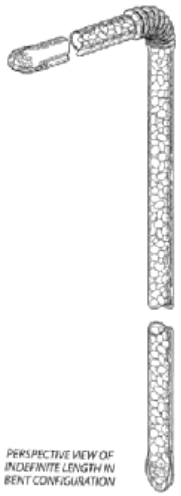
What is intellectual property?

Copyright – Art work, label

Trademark – Registered trademark. National and international

Patent –





Design – design of the straw and the package

Trade secret – *Recipes for and the method of manufacture protected by trade secrets. “Although we own the intellectual property, there’s not one person in our company who knows the whole manufacturing process from end to end,” … Sipahh flavours and filters are produced in separate plants and then assembled on other sites

* Straw war: company launches suit against Nestlé - https://www.dairyreporter.com/Article/2006/01/18/Straw-war-company-launches-suit-against-Nestle

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MIX & MATCH 6 PACK BUNDLE

$23.99

Your much loved combination of special flavours will be packed up into your very own Sipahh Flavour Crate and delivered direct to your door so you can enjoy more milk, less sugar everyday.

- Each Bundle Contains 60 Straws (minimum online order is 60 straws)
- Select 6 of any 10 pack flavour (choose all the same flavour or mix and match)
- Shipping starts from $7 (Free shipping applies for orders over $100)
- Less than 1/2 a Tsp of sugar per straw
- Mildly flavoured
- Lightly sweetened
- No preservatives
- Naturally coloured and flavoured

AUSTRAW REGULAR STRAW - RED - 1000

$6.00 Inc GST

1 Trolley

Add to Trolley >

Knowledge Economy and globalisation

- The IP system is several hundred years old and traders trying to create/improve products through technical changes and conveying that through distinctive signs is not new.
- What has changed is that the amount of knowledge going into products has increased and with globalisation, the internet and ICT millions of consumers have become accessible to the smallest SME
- Importance of IP has correspondingly increased

Acquisition of Rights

Innovative products/ process	Patents	Registration, renewal
Cultural, artistic and literary works	Copyright	No registration
Creative designs	Design Rights	Registration for registered designs. Renewal
Distinctive signs	Trademark	Registration, renewal [rights through use]
Confidential business information	Trade secret	NDA and other procedures

2. TAKING AN IDEA TO MARKET – IP ISSUES

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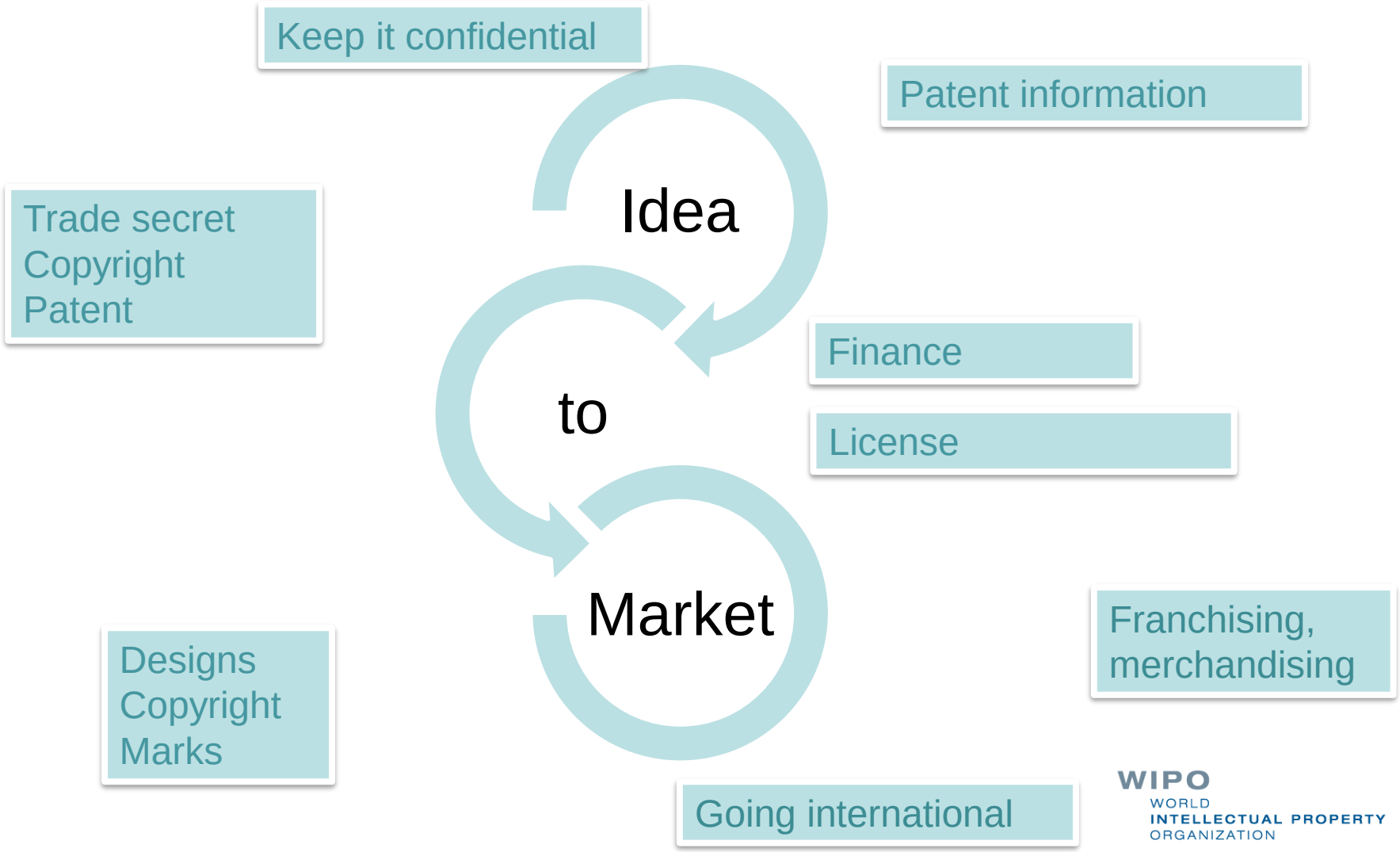
Keep it confidential
Patent information
Trade secret
Copyright
Patent
Idea
to
Market
Finance
License
Designs
Copyright
Marks
Franchising,
merchandising
Going international
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Patent information

Protection: exclusive right

- Territorial & time-limited
- Claims only

Disclosure: learning opportunity

- Global & permanent
- Full document: description of technology, bibliographic data

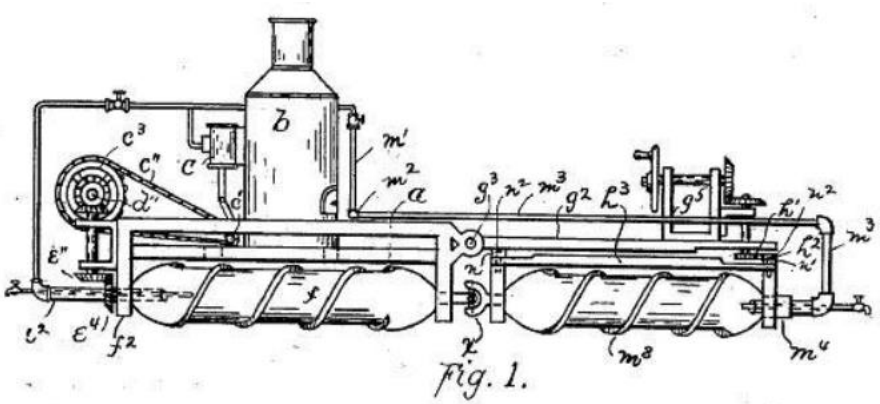
A unique source of technological information

- ❖ Over 100 million patent documents published to date
- ❖ Technical information never published elsewhere
- ❖ Search tools and services have made the exploitation of patent information simpler and more cost-effective: patent databases available online and free of charge

Strategic use of patent information

- Technical
  - Develop new solutions to technical challenges/ adapt existing technologies to local conditions
  - Avoid “reinventing the wheel” and wasting resources
- Legal
  - Avoid patent infringement (risk management)
  - Determine patentability of an invention (is it new?)
  - Identify technologies in the public domain (expired or not valid in the territory)
- Business
  - Track research activities of competitors
  - Identify opportunity for licensing and joint ventures (partners)
  - Review trends in specific areas of technology

Patents



- A product or process providing a new way of doing something, or a new technical solution to a problem (which may lower cost, create efficiencies, enhance performance, add new features etc..)
- If it is new, not obvious and has industrial applicability it could be granted a patent which would provide an exclusive right to prevent others from using the invention for a maximum period of 20 years.
- The inventor in exchange has the duty to disclose the technical information pertaining to his invention. Therefore the patent system makes a continuous stream of new technical information available to the public.

Access to finance

- A good IP management strategy specially by start-ups is essential for pitching for funds with investors;
  - Angel investors - Provide their own funds in return for equity and a stake in the management, usually have some experience in the area and bring their expertise into the management, enters at the early and high risk stages, and require quick and high returns
  - Venture capitalists - Invest other peoples money. They are usually investment companies. Come after the angels but typically invest more. They also require equity in exchange of the investment and a place in the board
  - Debt – IP as collateral

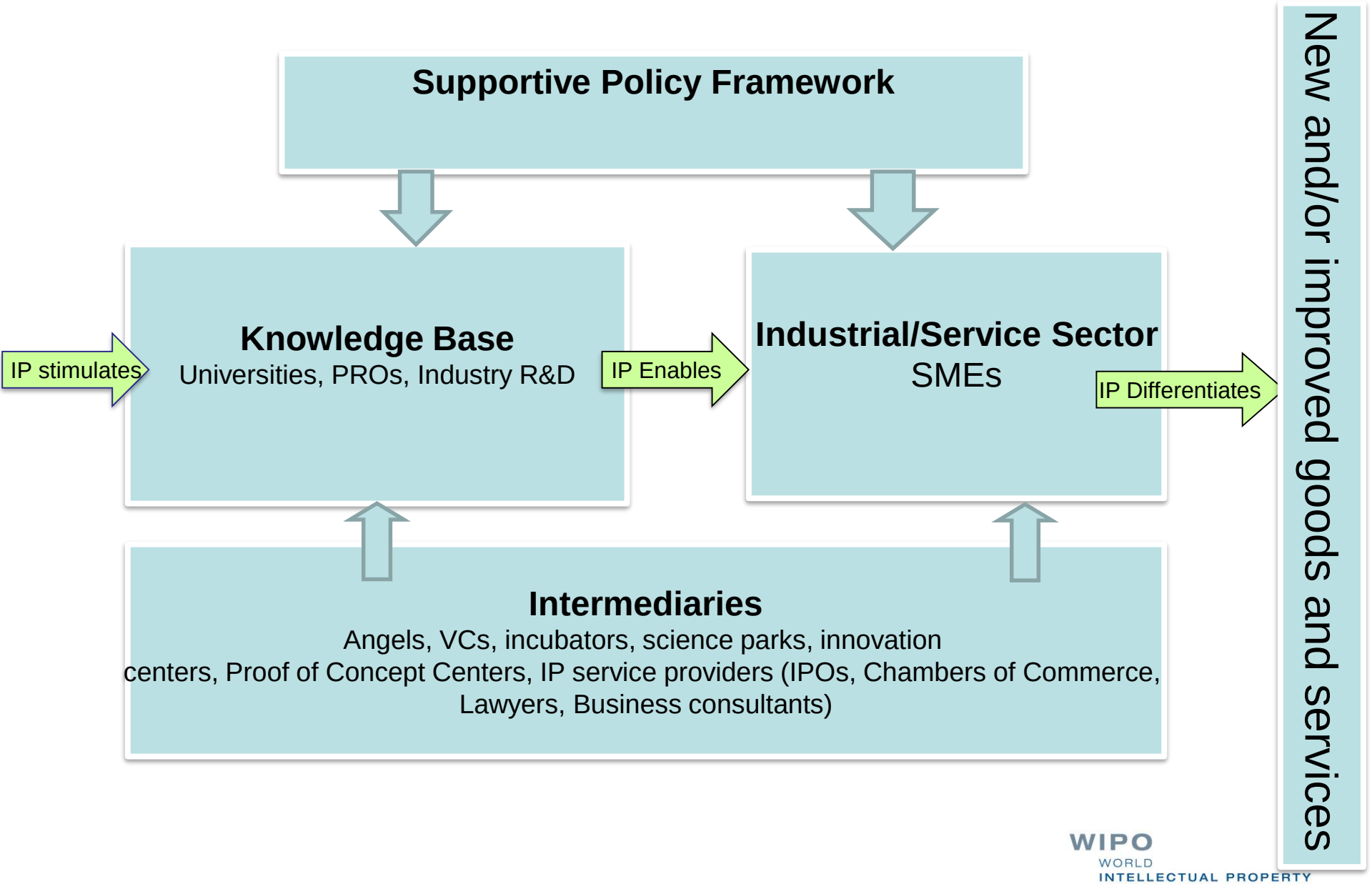
Partnering through Licensing

- Licensing is when an owner of an IP right transfers to another the right to exploit that right while retaining ownership to it.
- This is done through a legal agreement usually called a license agreement.
- A company could “license – out” IP, “license – in” IP or enter into cross licensing agreements where each company licenses in and out IP.
- One of the leading ways of collaborating with another for bringing a product to market

Going international

- IPR are territorial and, as such, only valid in the country or region in which they have been granted. This means
  - that in going international IP protection has to be obtained in the target markets
  - IP not protected in the home country can be freely used
- IP laws may differ from country to country
- Trademarks may have different meanings in different countries
- IP issues to be kept in mind when outsourcing, sub contracting and in engaging with partners

3. INTELLECTUAL PROPERTY IN THE INNOVATION SYSTEM


Supportive Policy Framework
Knowledge Base
Universities, PROs, Industry R&D
IP stimulates
IP Enables
Industrial/Service Sector
SMEs
IP Differentiates
New and/or improved goods and services
Intermediaries
Angels, VCs, incubators, science parks, innovation centers, Proof of Concept Centers, IP service providers (IPOs, Chambers of Commerce, Lawyers, Business consultants)

IP Stimulates

- Innovation is often risky, time consuming and costly and once produced there is no means for the innovator to appropriate its benefits for it is by nature a public good the use of which by third parties cannot be excluded
- Thus, there is little incentive for innovators to engage in such activity and as such an optimum supply of innovation for the benefit of society is not produced

- The IP system allows the inventors, innovators and creators amongst us proprietary rights over their output. They have under certain conditions the right to exclude third parties from using and exploiting these outputs without their authorization.
- The ability to own and control these outputs vis-à-vis third party use and exploitation is a powerful incentive for innovation.
- An IP system is therefore an essential component of the innovation policy options available to decision makers

IP Enables

- By providing for inventive, innovative and creative output to be owned, the IP system creates the platform from which transactions with respect to these intangibles can take place.
- Therefore IP can be sold, licensed, donated or dealt with in a variety of different ways allowing for revenue generation as well as further investment and development.
- Public goods on the other hand being freely available to all no single person will take the risks and the burden of investing in its further development and/or its commercialization.

IP Differentiates

- A product or service protected by one or more IP rights can compete more effectively in the market place; patents or trade secrets may result in a superior product (because it better meets consumer needs due to improved features, be produced faster/cheaper) it may have a more attractive design or its reputations symbolized by its trademark may attract loyal customers.
- A product or service protected by IP is therefore better able to differentiate itself from its competition and delivers more value to the consumer

Supportive Policy Framework

- Availability of venture capital and angel investors to fund R&D through to commercialization
- Foreign R&D to locate in the country through investment policies and tax policies
- Foreign and diaspora scientists and technical experts encouraged into the country through immigration policies
- IP intensive companies encouraged to bring their R&D and to commercialize in the country through tax policies
- Government procurement to support and promote innovative local companies
- Public sector innovation captured through IP management within government departments

This requires an

- Effective IP system in place for stimulating the production of knowledge
- Effective management of IP in the research output of universities and research institutes facilitating collaboration with industry
- Effective management of IP by SMEs in their competitive strategies

4. THE CHALLENGES IN DEVELOPING COUNTRIES

- No IP management in universities
- No IP management by innovative SME and start-ups
- No collaboration between universities and industry
- No IP professionals
- No systematic use of patent information in research
- No IP education
- No early stage financing
- No foreign R&D nor foreign and diaspora scientists locating in the country
- No policies to support local innovations

5. HOW CAN WIPO HELP?

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5. (I) POLICY MAKERS

Policy Development Support

- Undertake assessments of national SME (and the research) sector, determine their awareness, understanding, use and exploitation of the IP system. Identify gaps and challenges. Make recommendations for policy considerations
  - Based on desk research and interviews of representative stake holders

5. (II) RESEARCH

Institutional IP Policy

- Ownership – Rules as to who would own an invention coming out of a university would change depending on the resources used, whether it was sponsored research or if it was student research. Note: Bayh Dole Act in US
- Management – An office (technology management office) responsible for identifying, protecting, commercializing and rewarding the creators
    - Licensing and spin-offs
- Income distribution - Many universities grant an average of 35% income to the inventor

- Awareness raising and advocacy – Sensitize stakeholders about the importance of such policies.
- Capacity building and training on:
  - How to protect research
  - Different ownership models for faculty, students and visiting researchers
  - Commercialization options and responsibilities
  - Rules regarding collaborative and contract research
  - Distribution and allocation of benefits; incentives; management of conflict of interests; engagement with third parties
  - Public interest considerations

IP Commercialization

- *IPR Management Course* –an introductory course on IPR management issues at the institutional level.
- *Successful Technology Licensing (STL)* – introduction to the key terms of a licensing agreement, negotiation techniques, learning how to assign a value to the technology and to draft a basic licensing agreement.
- *IP Valuation* – addressing issues related to IP valuation in IP commercialization of research results
- *IP Marketing and Valuation* –how to market early stage technologies, identify partners and communicating information concerning available technologies.

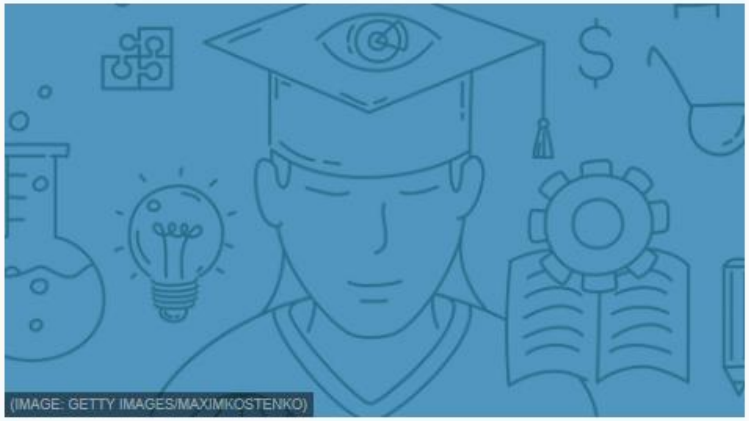
WIPO's Program on Universities and IP

What we do

We provide advice, support and resources to help universities and PRIs around the world tap into their IP and continue fuelling the innovation that drives society forward.

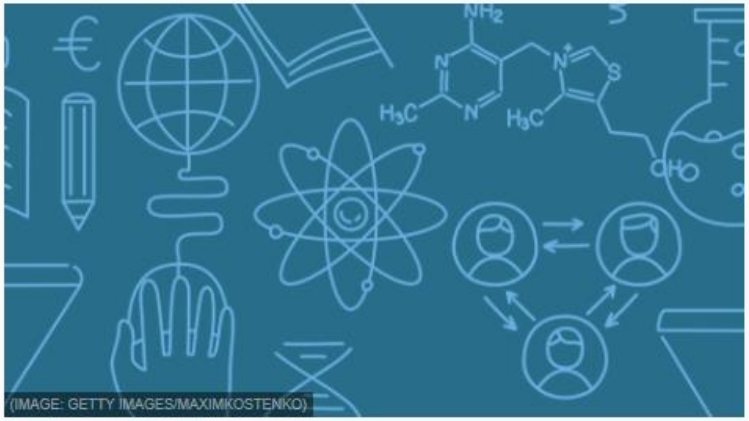
Resources

We maintain a non-exhaustive list of free resources for universities and PRIs.



IP policies for universities

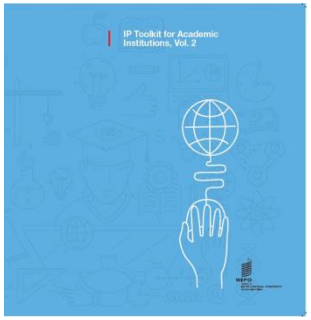
Knowledge and technology generated in universities and PRIs can have immense economic and societal benefit. A robust IP policy ensures that this value is maximized and protected.



Knowledge transfer for universities

For great ideas to flourish, they need to make their way from universities and research centers into the hands of the consumer. Understanding IP issues around knowledge transfer can help get discoveries from the lab to the marketplace.

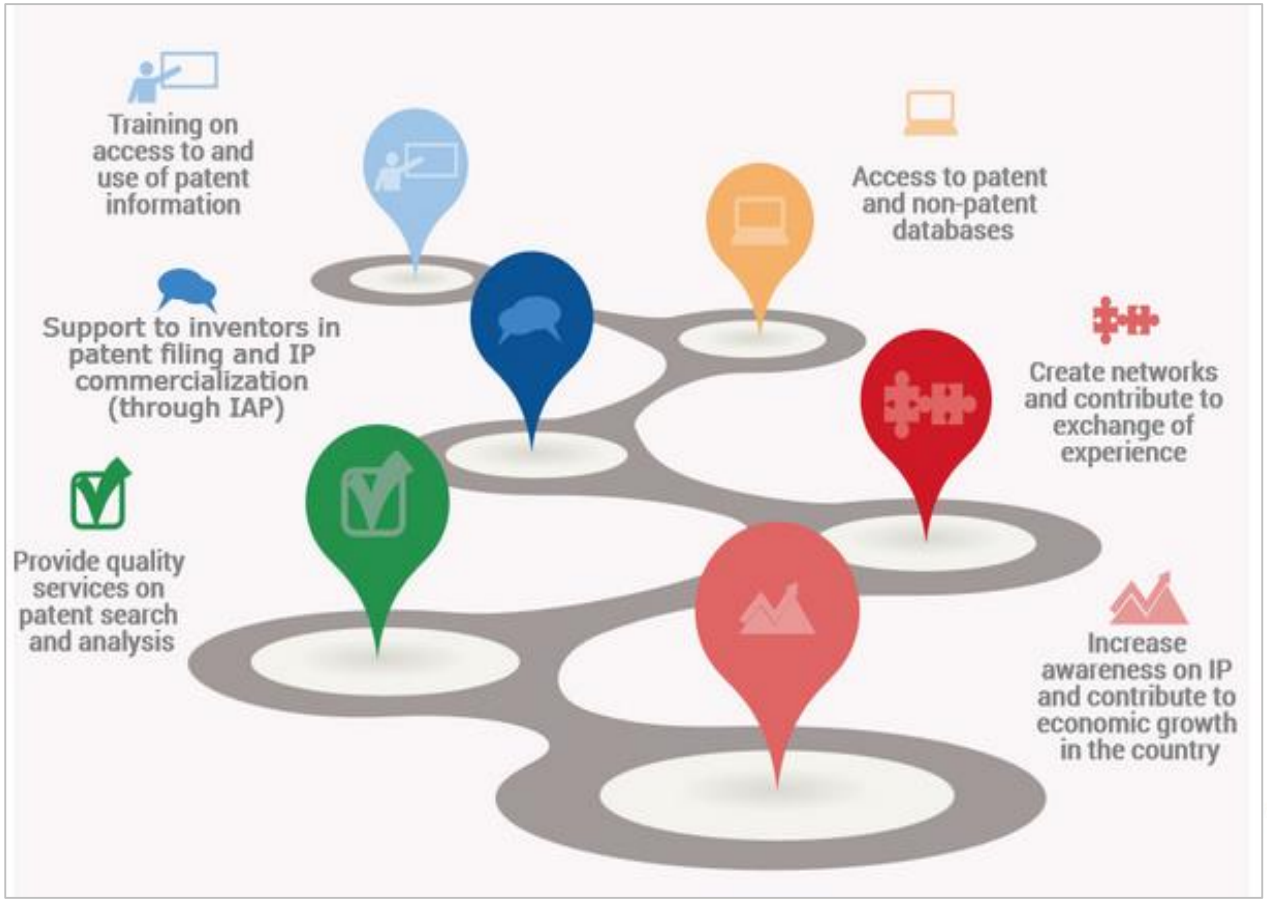
IP Tool Kit – Parts I and II



- Policy writers check list - step by step information on the different stages in the process of creating an IP Policy and guidance on policy choices
- IP policy template - a “model”, but customizable plus a compendium of key issues to be considered
- Guidelines - explains the contents and provides different options that could be adopted by individual institutions
- Academic Intellectual Assets Map
- Models of Agreements
- Hypothetical Cases.

WIPO TISC Program

- Building capacity to support innovation
- Facilitating access to and the use of technological information, scientific and technical literature, search tools and databases



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TISC resources and tools

Public-private partnerships to facilitate access to patent information

ASPI
ACCESS TO SPECIALIZED PATENT INFORMATION

→ Free or low-cost access to 8 commercial patent databases for developing countries

ARDI
Research for Innovation

→ Free or low-cost access to 30,000 journals, books and other sources of scientific and technical information for developing countries

Training and capacity-building

- On-site training on patent search and analysis
- E-learning tools: e-tutorial on patent information/webinars
- eTISC virtual networking & knowledge sharing platform

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5. (III) INNOVATIVE SMES

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Innovative SMEs and start-ups

- High growth, high tech, export oriented or niche market SMEs drive economic growth and employment creation.
- They create knowledge intensive jobs that are high wage
- IP is particularly important for them as they are -
  - more likely to be based on an innovative product or service
  - more likely to collaborate and partner
  - more in need of start up funding and investment.
  - More likely to be looking to export

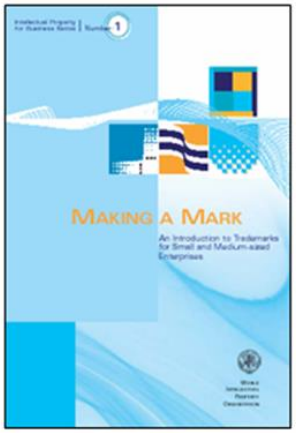
The IP System underutilized by SMEs

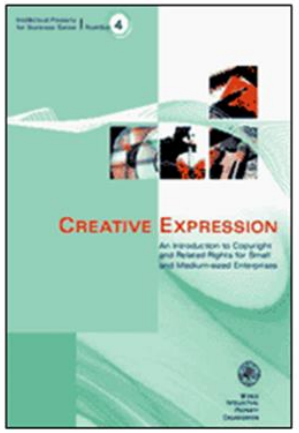
- Length and complexity of obtaining IP rights
- Cost of obtaining, maintaining and prosecuting IP rights
- Enforcement
- Fear of disclosure of sensitive knowledge
- Short life cycle of products
- Limited awareness of the IP system and its usefulness

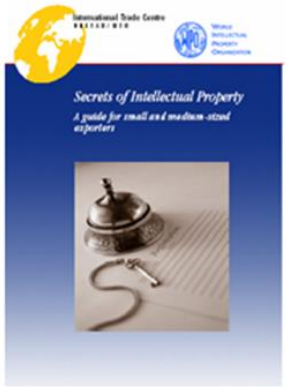
A Memorandum on removing barriers for a better use of IPR by SMEs, A report for DG Enterprise and Industry by an IPR Expert Group, June 2007

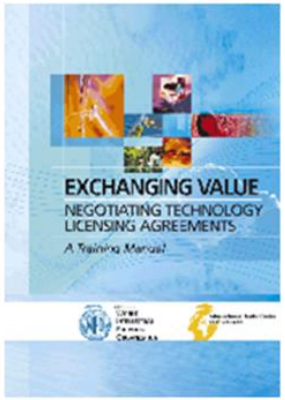
- Integrate IP support into business support services
  - IP Office is not the first and natural point of contact
  - Conflict of interest – IPO will promote registration
- If IPOs to provide this support they need more business knowledge (or confine themselves to technical areas of support – database searches for example)
- Ensure coordination and better linkages between IP offices, private actors providing business support and public actors providing innovation support.

IP for Business Publications









IP PANORAMA

IP PANORAMA 01: Importance of IP for SMEs

- Why is IP relevant to your SME?
- IP as a business asset
- IP as an investment
- The value of IP assets
- Introduction of IP Audit

IP PANORAMA 02: Trademarks and Industrial Designs

- Trademarks and Industrial designs to Increase the Power of Marketing
- Brand building
- How to protect trademarks and industrial designs
- Trademark management

IP PANORAMA 03: Invention and Patent

- Basics of invention and patent
- Patent application
- Patent infringement
- Patent management system

IP PANORAMA 04: Trade Secrets

- Basics of trade secret
- Trade secret management program
- Misappropriation of trade secrets
- Violation of trade secrets
- A trade secret audit

IP PANORAMA 05: Copyright and Related Rights

IP for Business Training Program

- Product development
  - Patent information, Trade secrets, Patents
  - Collaborating with research
  - Accessing finance
- Marketing
  - Trademarks, collective marketing, designs, copyright
  - IP issues in websites
- Exploiting IP
  - Licensing, franchising, Merchandising
- Going international
- Conducting an IP audit

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Case Studies on Intellectual Property (IP Advantage)

The case studies in the IP Advantage database offer insights into how IP works in the real world, and how its successful exploitation can contribute to development.

Please contact us to submit feedback and suggestions for new case studies.

Simple search | Advanced search | Full text search

Instrument of Protection

- * * * Any * * *
- Copyright and Related Rights
- Geographical Indications and Appellations of Origin
- Industrial Designs
- Integrated Circuits

Focus

- * * * Any * * *
- Branding
- Commercialization
- Financing
- Franchising

Search

Featured

Starting up in Pakistan

Seeds of innovation

A design as clear as water

Bats, birds & rural business

Support to be considered by government - Financial assistance

- Fee reductions for SMEs
- Subsidies for filing fees, lawyer's fees and translation costs (Czech Republic)
- Support cost for conducting search services
- Voucher system to enable access to private services
- Innovation cheques are intended to encourage SMEs to partner with research institutes for the purpose of developing scientifically based innovations. (Switzerland)

Support to be considered by Government - Enforcement support

- Vouchers to buy private services
- Good mediation services
- Insurance
- Training and awareness programs to enforcement officials on SME issues and the importance of enforcement for their business
- Maintaining a roster of lawyers, provide a limited number of free hours of consultation
- Note – enforcement depends on good IP management to begin with

5. (IV) IP EDUCATION

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Academy programs

Our rich portfolio of general and specialized courses on IP caters to different target audiences: inventors and creators, business managers and IP professionals, policy makers and government officials of IP institutions, diplomats, students and teachers of IP, and civil society. Courses combine traditional face-to-face and distance learning methodologies and are taught by people well versed in IP to stimulate innovation, creativity and development.

Professional development

General and specialized IP training for diplomats and government officials.

Academic Institutions Program and IP Training Institutions

Joint Master's degrees in IP, support for universities in IP teaching, and assistance in setting up national IP training institutions.

Distance learning

E-Learning platform for IP courses at basic and advanced levels in up to seven languages.

Summer school

Short IP courses for senior students and young professionals.

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Discussion – a better coconut scraper

You are a small start-up with a big idea for an innovative coconut scraper.

- What should you consider from an IP perspective in bringing such a product to the market?
- What support should the Government provide in this regard?