

Industry Experience in Transferring Technology

Technology Transfer: A Collaborative Approach to Improve Global Health

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International Federation of Pharmaceutical Manufacturers & Associations



THE IFPMA VIEW



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New IFPMA Publication

Technology Transfer: a Collaborative Approach to Improve Global Health
The Research-Based Pharmaceutical Industry Experience









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- Publication highlights experience of the R&D based industry in the area of technology transfer
- It includes more than 50 case studies showcasing IFPMA's Members track record
- It includes policy recommendations and draws conclusions with a view to inform the debate
- Provides IFPMA's insight into the factors influencing technology transfer in the pharmaceutical sector



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Technology Transfer...

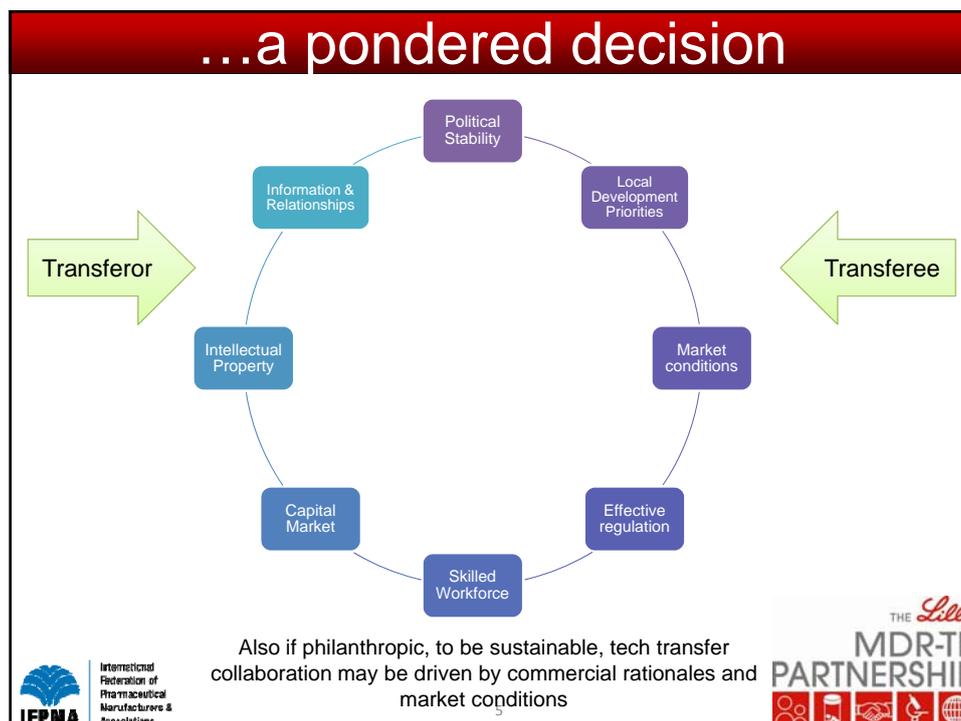
- *Accelerate introduction of innovative industrial processes
- *Increase reliability of supply and decrease reliance on imports
- *Raise the competence of local workforce
- *Reverse brain drain

Pharmaceuticals

- *Can bridge the access and R&D gaps
- *Can help improve health of recipient countries' populations
- *Improve use of innovative medicines
- *Strengthen the expertise of the local communities
- *Can help improving local infrastructures



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The Right Conditions (1)

- 1. Promising market and accessibility**
 - The larger the geographic bloc, the greater the investment appeal
 - Regional economic integration helps firms to consider small countries more easily
 - Disease prevalence shapes investment potential
 - Fair treatment of domestic and foreign companies
- 2. Political stability and good governance**
 - Long period of stability = stronger partnership
 - If tech transfer is philanthropic there is a need for sustainability
 - A strong healthcare system is key for incentivizing tech transfer

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The Right Conditions (2)

3. Appropriate capital markets

- Possibility for local partners to draw on domestic funding
- Other foreign funding sources to step in scarce resource setting
- Inward investment can be promoted through fiscal incentives

4. Innovation-friendly environment & adequate IP rights

- Increased certainty and transparency
- Stimulus for introducing new (foreign) cutting edge technologies
- Creates business culture
- Links public and private sector within borders
- Incentivizes domestic industrial development



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The Right Conditions (3)

5. Proper access to information

- Better documentation of available resources and partners
- Improved information reduce costs

6. Adherence to high regulatory standards

- Ability to meet high quality standards = technology transfer
- Predictability and harmonization of regulatory processes

7. Skilled workforce

- Absorptive capacity: not only infrastructure but human capital
- With right conditions, tech transfer can be a way to reverse “brain drain”
- Mentoring and training from high income countries

8. Clear economic development priorities



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A CONCRETE EXAMPLE

The Lilly MDR-TB Partnership



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Where it all began

- **1992** - Partners in Health (PIH) staff dies of MDR-TB on his return to the USA. Study of treatment failures revealed 16% prevalence of MDR-TB in Peru
- **1996** - Treatment started in cooperation with the National Tuberculosis Program (NTP) at Massachusetts State Laboratory (USA)
- **2000** - Lilly provided MSF and WHO with 2 anti-TB drugs at concessionary prices, and the Green Light Committee (GLC) was created
- **2003** - Launch of MDR-TB Partnership to support and provide medicines for pilot initiatives in resource-constrained countries worldwide



MISSION: to combat the growing MDR-TB pandemic and to support the Global Plan to Stop TB



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The Lilly Approach

Increasing global supply of drugs is one step to combating the growing MDR-TB pandemic

Effective treatment of MDR-TB requires more than just a supply of available drugs

Lilly leads a comprehensive approach to fighting MDR-TB

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Strategic Partnerships

Drug Supply

- Akorn, U.S.
- Aspen Pharmacare, South Africa
- Hisun Pharmaceutical, China
- Purdue University, USA
- Shasun Chemicals and Drugs, India
- SIA International/Biocom, Russia
- Vianex, S.A., Greece

Research & Academics

- Eli Lilly and Company
- Harvard University & Partners in Health
- Purdue University, USA

Awareness & Advocacy

- Advocacy Partnership
- Global Giving
- Global Health Advocates
- International Centre for Migration & Health
- Pulitzer Centre on Crisis Report
- RESULTS Educational Fund
- Stop TB Partnership
- TB Alert
- TB Survival Project
- World Economic Forum

Capacity Building

- Global Business Coalition
- Global Health Committee
- International Council of Nurses
- International Federation of Red Cross and Red Crescent Societies
- International Hospital Federation
- The New Jersey Medical School Global Tuberculosis Institute
- The CDC Foundation
- World Health Organization
- World Medical Association

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Focused Transfer of Technology (1)

- Share Lilly's specific and general manufacturing knowledge
- Create self-sustaining centers of manufacturing excellence capable of providing additional products and employment
- Support reliable generic producers to ensure expanded multi-source availability of the two drugs
- Offer manufacturing firms in MDR-TB "hot spots" (China, India, Russia, South Africa) the technology to produce two second-line TB drugs

China, India, Russia, South Africa



- Training in Good Manufacturing and Good Business Practices with support from Purdue University (USA)
- Provide Lilly staff on-site for technical assistance/training



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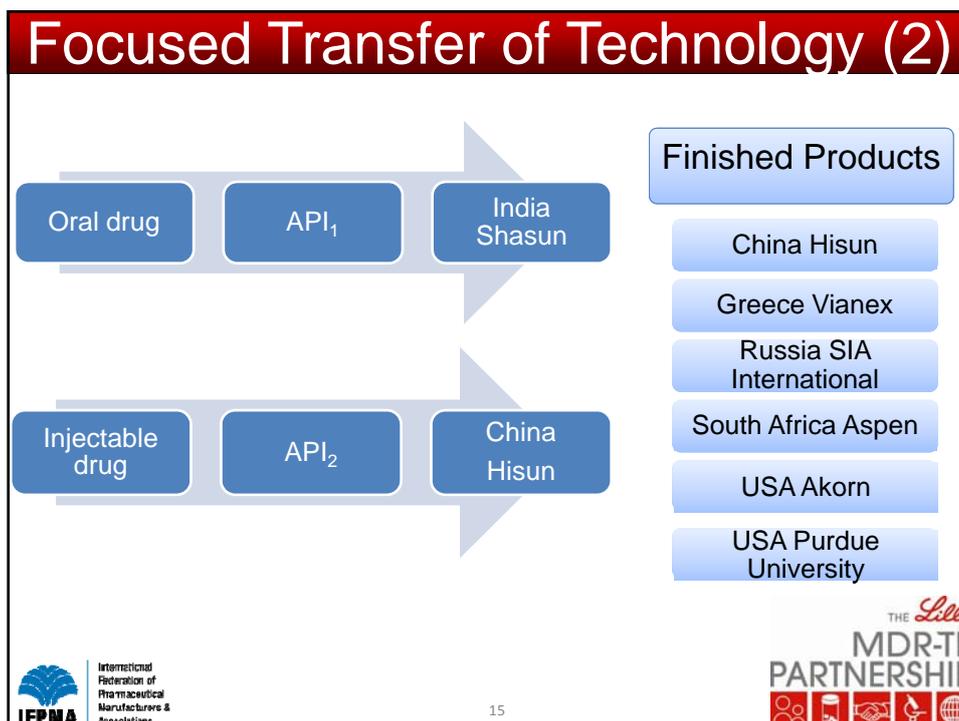


Transfer of Technology Map



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Best Practice: Aspen Pharmacare South Africa

Aspen Background and Role:

- Good “fit” - Leading generic company. Focus on ARVs for HIV/AIDS aligned with interest to produce MDR-TB treatment.
- Capability - to process, store, and ensure quality of second-line drugs; knowledge of local regulations, standards and specifications.
- Partner role - agreed to limit profit margin for sales to international orgs and WHO

How Tech Transfer helped Aspen:

- New product/capacity - production of injectable sterile formulation, and capsules
- Revenue stream – sales allowed profit to sustain ongoing re-investment in local staff and facilities
- Employee skill-building – Lilly staff provided expertise and mentoring

Lilly's contributions:

- Provide technical staff and know-how, and financial support for facility upgrades
- Program supports country Industrial Policy of retaining and developing critical skills and unique technologies,
- Reducing the dependency on imported products and providing export opportunities for the pharmaceutical sector

Logos at the bottom include IFPMA (International Federation of Pharmaceutical Manufacturers & Associations) on the left and THE Lilly MDR-TB PARTNERSHIP on the right.

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Conclusions and Recommendations

- Can be an innovative approach to bridge the R&D and access gaps. Sustainability is key to ensure a successful collaboration
- It is more than a question of “bricks and mortar” and occurs through many channels and specific conditions should be met.
- **Each actor should play its part. Focus to be given on:**
 - Attracting technology for which there is already a demand
 - Considering using mutual recognition of regulatory aspects
 - Provide access to international standard setting bodies
 - Create and provide technical and financial assistance

IFPMA Members continue to support technology transfers by:

- Creating new technology
- Delivering CSR programs offering a range of products and the transfer of specialized knowledge and skills
- Transferring not only manufacturing technology but also other forms of acquired expertise-equipment, staff training, quality, etc.



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« Give a man a fish and you feed him for a day.
Teach a man to fish and you feed him for a lifetime »

- Chinese proverb



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