WIPO International Conference on Intellectual Property (IP) and Development – Innovation in Green Technologies for Sustainable Development

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The Role of Intellectual Property in the Field of Green Technology

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IPR and Sustainability

Shift from neo-classical economics to ecological economics

• From growth to development, questioning „trickle down“ assumption, recognizing limited resources, tipping points, importance of human wellbeing

• Quest for balancing property rights, including responsibilities connected to these rights

IPR: Open vs. closed debate:

• Open: Sharing IP and IPR beyond organizational boundaries to accelerate sustainable innovations

• Closed: IP and IPR protection to attract investments and gain competitive advantage

• IPR as enabler for technology transfer

Source: e.g. Eppinger et al. (2021), Le Blanc, D. et al. (2012); Jain and Gurtoo (2021), Wiens (2014), Vimalnath et al. (2019)
Intellectual Property Models to accelerate sustainability transitions—Objectives

Evidence-based view on different IP models and how they accelerate or delay the development and diffusion of sustainable innovations.

Help stakeholders to select and to support appropriate IP models that accelerate sustainability transitions.
Intellectual Property Models for Accelerating Sustainability Transitions (IPACST) Project

Research Team: HTW Berlin and Freie University Berlin (Germany) Indian Institute of Science (India), University of Cambridge (UK), and Lund University (Sweden).

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Case Research Process

• Comparative case study analysis
• 28 in-depth cases using visual maps
• Born sustainable and turned sustainable, SME and large corporations
• Manufacturing (Chemical, Electronics, Materials) Clean Energy, Recycling and Waste Treatment
• Headquarters: Europe, India, USA, Australia but markets and supply chains include further regions in Africa and Asia
## IP Models from **closed** to **open**

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<tr>
<td>Private IP model –</td>
<td>- (Closed)</td>
<td>Ownership is highly</td>
<td>Owners prevent others from accessing their IP</td>
<td>Owners restrict commercial usage by others entirely</td>
<td>Trade secrets, IPR for own usage</td>
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<tr>
<td>closed</td>
<td></td>
<td>concentrated</td>
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<td>Club IP model – selected sharing</td>
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<td>Ownership is concentrated or distributed among several owners</td>
<td>Only members of the club can access IP. Entry barriers are high for outsiders</td>
<td>Only members of the club are entitled to commercial usage. Non-members are prohibited from commercial usage</td>
<td>Exclusive licensing, Cross-licensing, restricted patent pools</td>
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<tr>
<td>Common IP model –</td>
<td>(Semi Open)</td>
<td>No one owns the IP (anymore). IP is in the public domain</td>
<td>Entry barriers are relatively low for outsiders. Almost anyone can access the IP with or without contributing IP</td>
<td>Owners allow almost anyone to use the IP with restrictions</td>
<td>FRAND licensing, open source with usage restriction, open patent pools</td>
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<tr>
<td>broad sharing</td>
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<td>IPR lapsed- in public domain, pure open access, defensive publishing</td>
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<td>Public IP model –</td>
<td>+ (Open)</td>
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<td>open sharing</td>
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[^1]: Across all models, owners cannot restrict access to their publicly disclosed IP (e.g., in patent documents).

[^2]: Across all models, owners may not be able to restrict non-commercial under certain exemptions (e.g., for research, academic use).
Some Findings

- Almost all rely on collaboration and IP of others in early innovation phases
- Different IP models at market diffusion
- Very few use and think of IPR as a tool to increase sustainability impact
- IPR for investors and acquisitions, larger sharing for social business investors
- Differentiated licensing approaches for economic development in LMIC (low and middle income countries)
IPR: Potentials to increase transfer of adaptation and mitigation technologies

Willingness to share more but no action

- Support infrastructure and intermediaries (technology sharing platforms, standard licensing schemes to overcome information bias)
- Incentivise businesses to reflect sustainability impact of IPR, e.g. include IPR in sustainability reporting standards, in circular economy directives and design guidelines, in research and start-up funding
- Raise awareness of sustainability impact benefits of different licensing and IP sharing models
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Please find some resources at
https://ip4sustainability.org/

- IP models
- Case examples
- Business toolkit and teaching kit (will be added early 2022)
References


Jain, A., & Gurtoo, A. 2021. Can the restrictive boundaries of intellectual property create a larger social impact? Current Science, 120(11), 1667 – 1669. Click to download the full article.


### IP models for increasing sustainability impact through sharing

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<tr>
<th>Closed use (private good)</th>
<th>Restricted sharing (club good)</th>
<th>Broad sharing (common good)</th>
<th>Open sharing (public good)</th>
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<tbody>
<tr>
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<td>Social Licensing</td>
<td>Sustainability FRAND Licensing</td>
<td>Sustainability IPR Pledge</td>
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<td>Defensive Publishing</td>
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</tbody>
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- **Closed use (private good)**: High level of control over use of IP assets, low number of potential users of sustainability-related IP assets.
- **Restricted sharing (club good)**: Higher level of control over use of IP assets compared to closed use, higher number of potential users compared to closed use.
- **Broad sharing (common good)**: Moderate level of control over use of IP assets, high number of potential users.
- **Open sharing (public good)**: Low level of control over use of IP assets, highest number of potential users.

**Sustainability IPR Pledge**: An initiative that encourages sharing of IP assets to promote sustainability.

**Social Licensing**: An agreement that allows users to use IP at a reasonable rate.

**Sustainability FRAND Licensing**: A licensing agreement that ensures reasonable terms for use of IP.

**Defensive Publishing**: A model where IP is made available for free under certain conditions, primarily to protect oneself from legal action.