PATENT ASSESSMENT AND EVALUATION
ASSESSING THE INTELLECTUAL PROPERTY VALUE

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Fondazione Istituto Italiano di Tecnologia

Crash Course on Research Funding, Intellectual Property and Startup Creation
Trento, May 15, 2018
DIFFERENT FORMS
An intangible asset is an asset that lacks physical substance

- Patent
- Design
- Trademark
- Copyright
PATENT VALUE
SUPRA-MARGINAL ECONOMIC RETURNS

1. Competitive Equilibrium (MARGINAL COST)
2. Monopoly Equilibrium
3. IP Equilibrium

Demand Curve

QUANTITY

PRICE

Deadweight Loss
### Intellectual Property Rights

<table>
<thead>
<tr>
<th>Gains</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>More Innovation / Invention / Expression / Goods</td>
<td>Deadweight Losses</td>
</tr>
<tr>
<td>More Disclosure</td>
<td>Rent Seeking</td>
</tr>
<tr>
<td>More Commercialization / Products</td>
<td>Restriction of Future Innovation</td>
</tr>
<tr>
<td>More Investment in Invention / Expression / Creativity</td>
<td>Administrative Costs</td>
</tr>
</tbody>
</table>

In economics and in public-choice theory, rent-seeking involves seeking to increase one's share of existing wealth without creating new wealth. Rent-seeking results in reduced economic efficiency through poor allocation of resources, reduced actual wealth creation, lost government revenue, increased income inequality, and (potentially) national decline.
Figures

Cumulative

IT Priority
PCT International Application
EP, US, JP, CN National Phase
(IT, DE, FR, GB European Validation)
Patent litigation is the most expensive and time-consuming of all the types of lawsuits to initiate or defend.
Company Dashboard

COMPANY

May 9, 2018
DATA SET

Data Range
Searched from 103 countries and found 1,001 INPADOC families

Dataset
Query:IPC:(F21S2) AND “COMPANY”

Analysis Preferences
Data Grouping: One INPADOC family representative per group
Stemming: Off

Data Range
Searched from 103 countries and found 26 applications

Dataset
Query:IPC:(G06K9) AND “COMPANY”

Analysis Preferences
Data Grouping: One INPADOC family representative per group
Stemming: On
INTERNATIONAL PATENT CLASSIFICATION

F21
LIGHTING
F21S
NON-PORTABLE LIGHTING DEVICES OR SYSTEMS THEREOF
F21S2
Systems of lighting devices, not provided for in main groups F21S 4/00-F21S 10/00 or F21S 19/00, e.g. of modular construction

G06K9
Methods or arrangements for reading or recognising printed or written characters or for recognising patterns, e.g. fingerprints (methods or arrangements for graph-reading or for converting the pattern of mechanical parameters, e.g. force or presence, into electrical signals G06K 11/00; speech recognition G10L 15/00)
The pie charts show the percentage breakdown of the legal status and patent type of the entire portfolio.

1,015 Total INPADOC Families

502 Granted INPADOC Families

- Undetermined: 41 (4.04%)
- Pending: 165 (16.25%)
- Active: 502 (49.46%)
- Inactive: 307 (30.25%)

- Utility: 45 (4.43%)
- Invention: 970 (95.57%)
**TECHNOLOGY FOCUS**

<table>
<thead>
<tr>
<th>TECHNOLOGY FOCUS</th>
<th>INPADOC Families: 1,001</th>
</tr>
</thead>
<tbody>
<tr>
<td>F21Y101 Point-like light sources [7,2006.01]</td>
<td></td>
</tr>
<tr>
<td>INPADOC Families: 593</td>
<td></td>
</tr>
<tr>
<td>F21V12 Protecting lighting devices from thermal damage; Cooling or heating arrangements specially adapted for lighting devices or systems carrying fixtures combined with outlets for air treatment systems F24F 13/078 [1,7,2006.01, 2015.01]</td>
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</tr>
<tr>
<td>INPADOC Families: 249</td>
<td></td>
</tr>
<tr>
<td>F21V23 Arrangement of electric circuit elements in or on lighting devices protecting lighting devices from thermal damage F21V 29/00 [1,2006.01, 2015.01]</td>
<td></td>
</tr>
<tr>
<td>INPADOC Families: 227</td>
<td></td>
</tr>
<tr>
<td>F21Y19 Fastening of light sources or lamp holders, fastening electric light source solely by the coupling device H01R 33/00 [1,2006.01]</td>
<td></td>
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<tr>
<td>INPADOC Families: 3</td>
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<tr>
<td>G06K9 Methods or arrangements for reading or recognising printed or written characters or for recognising patterns, e.g. fingerprints; Methods or arrangements for graph-reproducing or for converting the pattern of mechanical parameters, e.g. force or presence, into electrical signals G06K 11/00; speech recognition G10L 15/00 [1,7,2006.01]</td>
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<td>INPADOC Families: 14</td>
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<tr>
<td>G01T7 Image analysis, e.g. from bit-mapped to non-bit-mapped [8,2006.01]</td>
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<tr>
<td>INPADOC Families: 4</td>
<td></td>
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<tr>
<td>G01SS Positioning by co-ordinating two or more direction or position determined Position</td>
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<tr>
<td>G01T3 Measuring distances in line of sight; Optical rangefinders (tapes, chains, or wheels for measuring) length</td>
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<tr>
<td>G01C21 Navigation, Navigational Instruments not provided for in groups G01C 1/00-G01C 19/00 (measuring distance)</td>
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</tr>
<tr>
<td>G01S11 Systems for determining distance or velocity not using reflection or radiation (position-finding by co-</td>
<td></td>
</tr>
<tr>
<td>G01C3 Measuring distances in line of sight; Optical rangefinders (tapes, chains, or wheels for measuring) length</td>
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<tr>
<td>G01S12 Beacon systems transmitting signals having a characteristic or characteristics capable of</td>
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<tr>
<td>G01N7 Television systems (tuels H04N 3/00; H04N 5/00) methods or arrangements, for coding, decoding, compressing or decompressing digital video signals H04N 19/00, selective content distribution H04N 21/00)</td>
<td></td>
</tr>
<tr>
<td>H05B37 Circuit arrangements for electric light sources in general [1,2006.01]</td>
<td></td>
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<tr>
<td>INPADOC Families: 2</td>
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<tr>
<td>H04N5 Details of television systems; scanning details or combination thereof with generation of supply voltages H04N 3/00; specially adapted for colour television H04N 5/00; servers specially adapted for the distribution of content H04N 21/00; client devices specially adapted for the reception of or interaction with content H04N 21/00)</td>
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<tr>
<td>H05B537 Circuit arrangements for electric light sources in general [1,2006.01]</td>
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<td>INPADOC Families: 2</td>
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CELL DIAGRAM

F21S2

G06K9

iit
TECHNOLOGY LANDSCAPING

F21S2

G06K9
INDUSTRY AVERAGE 183,000 USD
PORTFOLIO AVERAGE 370,000 USD
TECHNOLOGY AREA BENCHMARK

PORTFOLIO AVERAGE 557,000 USD

IPC G06K9
The valuation method and implementation were done accordingly to the highest quality standards through a full FMEA (Failure Mode and Effect Analysis, according to QS9000).

The valuation is derived from a set of 25 different value indicators (e.g. forward-backward citations, family size, covered countries, patent age or legal status etc.) and adjusted based on empirical data of traded patents in the past.
SUMMARY

FOUR Patent Families (OWNERSHIP 1/3)

Two Patent Family IPC F21S2
COMPANY Offer 3,000 USD each + Expenses
Evaluation by COMPANY portfolio 557,000 USD each
Requested (370,000 – 190,000 (rough cost estimate)) / 3 = 60,000 USD each

Two Patent Family IPC G06K9
COMPANY Offer 3,000 USD each + Expenses
Evaluation by COMPANY portfolio 370,000 USD each
Requested (557,000 – 257,000 (rough cost estimate)) / 3 = 100,000 USD each
NINE POINTS TO CONSIDER IN LICENSING UNIVERSITY TECHNOLOGY

Association Of University Technology Managers

Licensing approaches, even for comparable technologies, can vary considerably from case to case and from institution to institution based on circumstances particular to each specific invention, business opportunity, licensee and university.

In spite of this uniqueness, universities share certain core values that can and should be maintained to the fullest extent possible in all technology transfer agreements.

In the Public Interest: Nine Points to Consider in Licensing University Technology
March 6, 2007
NINE POINTS

1. Universities should reserve the right to practice licensed inventions and to allow other non-profit and governmental organizations to do so
2. Exclusive licenses should be structured in a manner that encourages technology development and use
3. Strive to minimize the licensing of “future improvements”
4. Universities should anticipate and help to manage technology transfer related conflicts of interest
5. Ensure broad access to research tools
6. Enforcement action should be carefully considered
7. Be mindful of export regulations
8. Be mindful of the implications of working with patent aggregators
9. Consider including provisions that address unmet needs, such as those of neglected patient populations or geographic areas, giving particular attention to improved therapeutics, diagnostics and agricultural technologies for the developing world

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In the Public Interest: Nine Points to Consider in Licensing University Technology
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THANK YOU

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Technology Transfer
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