Shackling the digital economy means less for everyone

Birgitte Andersen
AGENDA

• The positioning of my research
• Intellectual Property Right (IPR) rationales
• 3 sector studies to illustrate the argument: “Shackling the digital economy means less for everyone”
  – Music
  – Information and Communication Technology (ICT)
  – University and public research organizations
• Conclusion
The knowledge economy and me

Knowledge transfer / consultancy:

RESEARCH funding:

Promotion of doctoral training:

ESSID

MINDS

U-Know
Rationales for IPRs

- Creating markets for ideas and creative expressions;
- Facilitating ‘spill-over’ and technological transfer;
- Stimulating innovation-based competition and entrepreneurship;
- Rewarding inventiveness and creativity throughout the economic system;
- Recover R&D costs;
- Facilitating sustainable development of firms and industries.

Closing income and technology gaps?
Tightened enforcement of IPRs

No serious worries about the tightening the IPR system since the 1980s:

• Digital Economy Act, 2010 (MUSIC INDUSTRY)
• Proprietary enforcement of computer implemented inventions (ICT INDUSTRY)
• Patents on output from publicly funded research: The Bayh-Dole Act in the US (1980) adopted in most OECD countries (UNIVERSITY SECTOR)

Other debates include:

- The Trade Related Aspects of Intellectual Property Section (TRIPS) of the World Trade Organization.
- Pure ideas (procedures to obtain genetic code structures and some mathematics).
- Increased period of protection
- Traditional knowledge
- New financial frameworks from the 1980s / Nasdaq
Increase in IPR historically

Source: Based upon data from the [http://www.uspto.gov](http://www.uspto.gov)
“My Government will introduce a Bill to ensure communications infrastructure that is fit for the digital age, supports future economic growth, delivers competitive communications and enhances public service broadcasting.”
Digital Economy Act

HISTORY:

Follows the Digital Britain report of June 2009

First introduced in the Queen’s speech (18 Nov 2009)

Proposal by Lord Mandelson (BIS, Labour)

Passed in the ‘wash up’ period before the General Election (8th April 2010)
  ✔ Supported by the Conservatives
  ❖ Not supported by the Liberal Democrats

Entered into force June 12, 2010
Digital Economy Act:

Measures designed to curb illegal file-sharing on the Internet have received most attention

Instructions to Ofcom to draw up guidelines for rights holders and ISPs on how they deal with net piracy.

For file-sharers, instructions include:
• Sending letters to people identified as downloading illegal content and asking them to stop and pointing out legal alternatives.
• Limiting the speed or capacity of an individual's service or temporarily suspending their service.

For public wi-fi services, instructions include:
• The owner of a connection (e.g. Cafe owners, Universities, Libraries) could be held liable, even if they are not personally responsible for downloading pirated material.

Why?
• The government says it wants to protect the UK's creative industries, which it says is under threat from piracy.
THE CHANGING MUSIC INDUSTRY
What do the industry stakeholders think:

POWER STRUGGLE ACROSS TECHNOLOGICAL REGIMES

Supporting Digital Economy Act and ‘criminalizing’ P2P filesharing

Lining up against Government's stance on P2P file sharing
What do the artists think?

Supporting Digital Economy Act and ‘criminalizing’ P2P filesharing

From top left:
• Lily Allen
• James Blunt
• Gary Barlow (Take That)
• Keane
• Spandau Ballet

Lining up against Government’s stance on P2P file sharing

From left:
• Nick Mason (Pink Floyd),
• Ed O’Brien (Radiohead),
• Dave Rowntree (Blur)
• Billy Bragg
• Mick Jones (The Clash)
Research

P2P-filesharing is the reason for the downfall of the music industry

• Liebowitz (2005, 2008)
• Rob and Waldfogel (2004)
• Zenter (2004)

No harm in P2P-filesharing

• Andersen and Frenz (2007, 2010)
• Oberholzer-Gee and Strumpf (2007)

Lost court case:

The Pirate Bay

Won court case:
"The Impact of Music Downloads and P2P File-Sharing on the Purchase of Music: A Study for Industry Canada"

Why Andersen and Frenz (2007) study is superior:

Large scale household survey (2100 completed interviews):

- Representative sample of the Canadian population aged 15 and above (age, gender, region and downloading status)

Methodological contribution:

- Use of Micro data as opposed to Macro data
- Direct measurement of peoples’ behaviours rather than assuming relationships
Music acquiring

Free music acquiring (% of population):
- P2P file-sharing (29%)
- ripping music from CDs (29%)
- promotional websites (23%)
- private websites (9%)
- copying MP3 (21%)

Music purchase:
- CDs
- Electronically delivered music: MP3

OVERALL RESULT:

P2P file-sharers:
- do not purchase more or less CD albums than those not engaged in such activities
- are more likely to purchase MP3
P2P file-sharing: Substitute or complement to music purchases?

Substitution effect

- Unwilling to pay (price issue)
  - ‘Album too expensive’ (price issue)

Sampling effect

- (i) Market creation
  - ‘hear before buying’ (exploring)
  - ‘not elsewhere available’ (new markets)

- (ii) Market segmentation
  - wishing to not to buy ‘whole album’, but prefer the single digital file (music format issue)

RESULT FOR SUB-SECTION : P2P FILE-SHARERS

‘Market creation effect is greater than ‘market substitution effect’

Those who file-share a lot also purchase more music than those who file-share less.
P2P file-sharing: Substitute or complement to music purchases?

Role of technological compatibility

✓ Ownership of MP3 player

Role of alternative entertainment goods (substitution):

• DVDs,
✓ videogames,
✓ cinema tickets,
✓ concert tickets

RESULT FOR SUB-SECTION: P2P FILE-SHARERS

ENTERTAINMENT CULTURE
There is a positive relationship between P2P file-sharing and purchase of other entertainment products (videogames, cinema tickets, concert tickets)

CHANGE IN TECHNOLOGICAL PARADIGM EXPLAINING FALL IN CD SALE
• People who own MP3 players are less likely to purchase CDs
• People who purchase MP3 are less likely to purchase CDs
• Digital divide: People who report greater internet-skills and younger age groups more likely to purchase MP3. (No gender divide: women as active as men online)
Global recorded music sale 1973 – 2008 by format, in volume (millions)

2008: UK Music industry worth £ 3.6bn. PRS Music reports record income up 4.7% from 2007 and expected to continue to raise:
- Recorded music revenue is down.
- Income from performance rights, live concerts, subscriptions, master-tones, advertisement, sponsorship etc, is up.
- Share of value pie to artists is up.

Source: based upon data reported by IFPI Handbook 2009 (including mobile sale reported by BPI Handbook 2009)

Top retailers:
- USA: iTunes
- UK : HMV
Implications: Digital Economy Act

• The power struggle across technological regimes: ‘digital’ *versus* ‘analogue’ / ‘old’ *versus* ‘new’ business models

• ‘Witchhunt’ on P2P file-sharers ...

• What if we wrongly blame the P2P file-sharers?

• Disconnecting the networked economy

• The question of rights, but whose rights?
THE PERVERSIVE ‘ICT’ INDUSTRY
The pervasive ICT industry

Debate:

- What shall be protected (Size and nature of inventive step?; Business methods patents?)
- Open source and free software (Useful for wealth creation? As complementary or substitute strategy?)
- Operational aspects of wealth creation from IP
- Market failures in the IP marketplace
What do the industry stakeholders think?

Proprietary IP on computer implemented inventions

**Financial majority:**
- Nokia,
- Siemens,
- IBM (also pushes for ‘soft IP’)
- etc.

‘Soft IP’ - Non-proprietary IP

**Democratic majority:**
Small and medium sized enterprises
## ICT firms (in the UK) engagement in IP marketplaces

<table>
<thead>
<tr>
<th>Governance Structures</th>
<th>ICT Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>n. organizations that exchange IP</td>
<td>6% of UK population (28 firms)</td>
</tr>
</tbody>
</table>

### PATENTS
- selling patents | 39% |
- buying patents | 54% |
- out-licensing patents | 69% |
- in-licensing patents | 77% |
- cross licensing patents | 54% |
- participation in patent pools | 23% |

### COPYRIGHT
- selling copyright | 44% |
- buying copyright | 56% |
- out-licensing copyright | 33% |
- in licensing copyright | 22% |

### ‘OPEN SOURCE’ IP
- participating in open source software development | 100% |
- participating in other open source communities | 43% |

### NOT PATENTED INNOVATIONS
- releasing not patented innovations to the public | 37% |
- releasing not patented innovations to private firms | 58% |
- using not patented innovations | 68% |
- collaborating with universities without patent restrictions | 32% |
Dominant IP market strategies for the various benefits: Revealed IP marketplace advantage

<table>
<thead>
<tr>
<th>Marketplace</th>
<th>Financial gain</th>
<th>Market positioning</th>
<th>Innovation</th>
<th>Strategic relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
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<tr>
<td>Copyright</td>
<td>√</td>
<td>√</td>
<td></td>
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<tr>
<td>Open source</td>
<td></td>
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<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Non-patented innovations</td>
<td></td>
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</tbody>
</table>
### What IP market obstacles do ICT firms experience?

<table>
<thead>
<tr>
<th>obstacle categories</th>
<th>specific IP market obstacles</th>
<th>patent</th>
<th>copyright</th>
<th>open source</th>
<th>non-patented</th>
</tr>
</thead>
<tbody>
<tr>
<td>search problems</td>
<td>difficulty in locating owners of IP</td>
<td>20. %</td>
<td>40. %</td>
<td>17 %</td>
<td>9. %</td>
</tr>
<tr>
<td></td>
<td>difficulty in locating the users of IP</td>
<td>20. %</td>
<td>0. %</td>
<td>17 %</td>
<td>18. %</td>
</tr>
<tr>
<td></td>
<td>difficulty in finding the best IP</td>
<td>30. %</td>
<td>0. %</td>
<td>33. %</td>
<td>18. %</td>
</tr>
<tr>
<td>lack of transparency</td>
<td>difficulty in assessing the degree of <strong>Originality</strong> of the IP</td>
<td>50. %</td>
<td>50. %</td>
<td>25. %</td>
<td>46 %</td>
</tr>
<tr>
<td></td>
<td>description or drawing in the IP document is not clear</td>
<td>30. %</td>
<td>0. %</td>
<td>17 %</td>
<td>18. %</td>
</tr>
<tr>
<td></td>
<td>difficulty in assessing the <strong>economic value</strong> of IP</td>
<td>60. %</td>
<td>33. %</td>
<td>42 %</td>
<td>18. %</td>
</tr>
<tr>
<td>Contract and enforcement</td>
<td>difficulty in negotiating a price for the IP</td>
<td>60. %</td>
<td>16 %</td>
<td>0. %</td>
<td>18. %</td>
</tr>
<tr>
<td></td>
<td>difficulty in negotiating the terms (not related to price) of the exchange contract</td>
<td>50. %</td>
<td>33. %</td>
<td>17 %</td>
<td>18. %</td>
</tr>
<tr>
<td></td>
<td><strong>Excessive cost of enforcing the exchange contract</strong></td>
<td>50. %</td>
<td>17 %</td>
<td>17 %</td>
<td>9. %</td>
</tr>
<tr>
<td></td>
<td>problems (not related to cost) with enforcing the exchange contract</td>
<td>20. %</td>
<td>0. %</td>
<td>42 %</td>
<td>9. %</td>
</tr>
<tr>
<td></td>
<td>trust issues (e.g. opportunistic behaviour, free-riding, or similar)</td>
<td>10. %</td>
<td>17 %</td>
<td><strong>50. %</strong></td>
<td>27 %</td>
</tr>
<tr>
<td>Regulation and practices</td>
<td>differences in practices of firms</td>
<td>0. %</td>
<td>33. %</td>
<td>17 %</td>
<td>0. %</td>
</tr>
<tr>
<td></td>
<td>regulations allow too exclusive rights</td>
<td>10. %</td>
<td>17 %</td>
<td>25. %</td>
<td>18. %</td>
</tr>
<tr>
<td></td>
<td>international IP regulations do not fit the needs of different local markets</td>
<td>10. %</td>
<td>17 %</td>
<td>8. %</td>
<td>18. %</td>
</tr>
</tbody>
</table>
THE COMMERCIAL UNIVERSITY
The commercial university

Universities are increasingly encouraged to protect their knowledge base via patents:

- Bayh Dole Act (US 1980), Cooperative Research Act (1984), and similar legislation in most OECD countries
- Wide ranging debate on advantages and disadvantages of academic patenting
Creating value from university-industry collaboration: IP flows in marketplaces

<table>
<thead>
<tr>
<th>IP market</th>
<th>Research base into use</th>
<th>Use into research base</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knowledge transfer</td>
<td>Awareness of research base</td>
</tr>
<tr>
<td>Patents</td>
<td>57 %</td>
<td>17 %</td>
</tr>
<tr>
<td>Copyright</td>
<td>77 %</td>
<td>62 %</td>
</tr>
<tr>
<td>Open source</td>
<td>83 %</td>
<td>17 %</td>
</tr>
<tr>
<td>Non-patented ideas</td>
<td>77 %</td>
<td>47 %</td>
</tr>
</tbody>
</table>
Shackling the digital economy means less for everyone