Overview

- **(Vertical) Market segments:**
  - Mobile social networks
  - Mobile music
  - Mobile television / video
  - Mobile gaming
  - Others: m-books / m-commerce / m-education /...

- **(Horizontal) Common issues:**
  - Devices
  - Apps and browsers
  - Business models / value chain disintermediation /...
  - Privacy / use of personal information

- Some conclusions – implications
## BACKGROUND

- **Increasing availability (and affordability) of mobile broadband**
  - In 2015 half of the subscriber base will be in 3G/4G, and 80% in 2020 (27% in 2011)
  - 7.6 billion mobile users by 2020 (5.4 billion in 2011). Mobile subscribers per 100 inhabitants: 99%.

- **Increasing availability (and affordability) of smartphones**
  - In 2020 81% of phones sold globally will be smartphones (2.5 billion) from 26% in 2011 (400 million)
  - 595 million tablets in 2020 (70 million in 2011)

## THE MOBILE PLATFORMS

**Apple, Google and the rise of the “apps” economy**

- In three years (2008-2011) the number of apps available for download in the Apple platform has grown from 500 to 500,000
- App stores have changed the value chain of software (distribution and pricing), and also the industries of music, books, games, ...
- How to control a platform? Proprietary vs. “open but not open”. The gateway roles (customers, developers, advertisers, …)

- App stores vs. mobile web browsers
- Mobile platforms as multi-sided markets
- Market power with regard to developers, advertisers and consumers
MOBILE SOCIAL NETWORKS
Facebook: the biggest mobile social network is a social network on a mobile

- Monthly minutes spent on social networking sites grew 50% in 2011
- Total monthly unique visitors was over 200 million in 2011
- The raise of the hyper-connected user
- Targeted / behavioural advertising as the main business model based on network effects and increase of users’ time on social networks

“Digital shadows” of users, the challenges to privacy / personal information. Differences EU vs USA

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2011</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yearly revenues</td>
<td>3,711 M$</td>
<td>1,974 M$</td>
</tr>
<tr>
<td>Annual revenue growth</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>Number of users (millions)</td>
<td>845</td>
<td>350</td>
</tr>
<tr>
<td>Annual users growth</td>
<td>140%</td>
<td></td>
</tr>
<tr>
<td>Growth rate</td>
<td>8.39 users per second</td>
<td></td>
</tr>
<tr>
<td>Daily reach (% of internet users that visit per day)</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Revenues per user ($)</td>
<td>4.39</td>
<td>5.64</td>
</tr>
<tr>
<td>Type of information</td>
<td>Video, images, text</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Social</td>
<td></td>
</tr>
<tr>
<td>Range of countries</td>
<td>Worldwide (except China)</td>
<td></td>
</tr>
</tbody>
</table>

MOBILE MUSIC
From ringtones to full tracks in the cloud

- Up to 2005: ringtones
- From 2005: full tracks (the music store concept, Rhapsody)
- From 2008: streaming (Spotify)
- From 2011: cloud (Amazon, Google, ...)
- Ringtones now in crisis
- Full tracks expected to be bigger than ringtones in a future-linear way of thinking, never happened
- Still today we mainly use side-loading (i.e. iTunes)

Digital music has become mobile on its own “floating between PCs, portable players, home multimedia, video game consoles, car stereo, the cloud” (Filchard, 2011), consumers forced to use clunky applications for DRM-free tracks... room for the smartphone? 360° music management?

- Fixed-mobile platform convergence?
- Cloud / streaming impact on network performance? Investments, network neutrality and spectrum management
- Data roaming
**MOBILE GAMING**

Testing new technologies and business models

- Before 2002 games embedded in the handset
- Up to 2007: game portals
- Dramatic change in 2007 with “first wave of smartphones”
- From 2008, no longer it is a delayed-in-time “poor brother” of console and pc games, but a distinct and exciting experience and a new wide ecosystem (Angry Birds)

<table>
<thead>
<tr>
<th>Market segment</th>
<th>2007 (B €)</th>
<th>2008 (B €)</th>
<th>2013 (B €)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV advertising</td>
<td>128</td>
<td>128</td>
<td>130</td>
</tr>
<tr>
<td>Internet advertising</td>
<td>40</td>
<td>66</td>
<td>67</td>
</tr>
<tr>
<td>Recorded music</td>
<td>25</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Video games (total)</td>
<td>15</td>
<td>68</td>
<td>56</td>
</tr>
<tr>
<td>Console games</td>
<td>19</td>
<td>23</td>
<td>31</td>
</tr>
<tr>
<td>Online games</td>
<td>5.3</td>
<td>6.2</td>
<td>11</td>
</tr>
<tr>
<td>Mobile gaming</td>
<td>2.1 – 4.3</td>
<td>2.6 – 4</td>
<td>4.8 – 12</td>
</tr>
</tbody>
</table>

Source: own compilation of industry data

- Wide demographics, ubiquity, personal, social and context-aware
- Results from competition between platforms? Market structure?
- Innovators and mobile industry in Europe, but trailing behind in platforms
- Niche markets – serious games
- Consumer protection: content rating, childhood protection
- Innovations in business models: in-apps revenues
- Data roaming

**MOBILE TELEVISION / VIDEO**

Tablets, at last the unexpected game changers

- Standardisation support since 2007 (DVB-H), currently in a “limbo”
- Commercial launches using major events (olympics, football)
- Some modest success stories: Japan and Korea
- Notorious failures (BBC 2008) and limited response from EU markets (= 5 million users)
- “Impasse” situation with divergent technological options: broadcasting vs mobile comms

- Lack of perceived value and usefulness from users on a mobile handset while on-the-go
- Unexpected behaviour of users: at home, after prime-time, long time view, …
- Internet-enabled mobile devices (tablets)
- Viewers migrating from traditional linear schedules to on-demand viewing
- Free-to-air (advertising-based) vs. pay-per-view
- Video streaming impact on network performance (traffic x70 until 2018)? Off-loading, Investments, network neutrality and spectrum management
- Data roaming
- Double regulation (audiovisual media and telecomms)
MOBILE PUBLISHING
Along the music industry path?

➔ Digitalization. Phase I
  ▪ Decline on physical spending, not compensated by digital growth (eReaders / eBooks)
  ▪ Prosumers
  ▪ Self-publishing

➔ Digitalization. Phase II
  ▪ Virtualization (dematerialization / cloud services)
  ▪ The saviours (“cannibalizing the old industry): proprietary/"open but not open" devices and open formats

➔ Conclusion: Digital transformation of the book industry won’t stop – Potential US domination

For discussion: extreme protection (the “cultural argument”) vs. radical policies (funding digital libraries, public procurement) vs. usual innovation policies vs. shy legislative initiatives (out-of-commerce, orphan works)

MOBILE ADVERTISING
The ultimate mass market ad platform

▪ Mobile marketing still nascent, less than 2% of total digital ad revenue, less than 1% of total ad spending and less than 1% of global mobile revenues

▪ As the number of users grow and the time spend on the mobile device grows, marketers will follow

▪ Advantages:
  ▪ Scale
  ▪ Reach
  ▪ Targetability
  ▪ Engagement
  ▪ Analytics

▪ By 2020 mobile will be the dominant online ad market segment

▪ Google and Facebook dominant also in the mobile market?

▪ Ads for everyone in the ecosystem?
MOBILE MARKET SEGMENTS

Summary

<table>
<thead>
<tr>
<th>Market segment</th>
<th>2007 (€)</th>
<th>2008 (€)</th>
<th>2012-2013 (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile ad (text-pictures)</td>
<td></td>
<td>1 - 2</td>
<td></td>
</tr>
<tr>
<td>Mobile ad (targeted search)</td>
<td></td>
<td>3,9 – 5,8</td>
<td></td>
</tr>
<tr>
<td>Mobile ad (tv based)</td>
<td></td>
<td>1 – 4,3</td>
<td></td>
</tr>
<tr>
<td>Mobile ad (total)</td>
<td>0,6 - 1</td>
<td>1 - 2</td>
<td>4 – 8,7</td>
</tr>
<tr>
<td>Mobile gaming</td>
<td>2,1 – 4,1</td>
<td>2,6 - 5</td>
<td>4,8 – 9,7</td>
</tr>
<tr>
<td>Mobile music (total)</td>
<td>6 – 6,5</td>
<td>8,8</td>
<td>12,8</td>
</tr>
<tr>
<td>Mobile tv (total)</td>
<td>0,7 – 1</td>
<td>1</td>
<td>2 – 8,7</td>
</tr>
<tr>
<td>Mobile social networks and UGC</td>
<td>0,4</td>
<td>1,3</td>
<td>7,4 – 8,2</td>
</tr>
<tr>
<td>Mobile app stores</td>
<td>-</td>
<td>5</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: Feijoo et al (IPTS, 2009)

Mobile Media Ecosystem

DEVICES

Their increasing relevance in the ecosystem

Which will be next?
TECHNOLOGICAL DISRUPTIONS
From batteries and displays to new interactions

Relevance

1. LTE-4G
2. Cognitive technologies
3. Artificial intelligence
4. Internet of things
5. New user interfaces
6. Location awareness of presence
7. Semantic structured knowledge
8. Cloud computing
9. Augmented reality – 3D
10. Mobile P2P – Mesh networks

Mobile as the tool to bridge the real and virtual worlds

MOBILE MEDIA IN OUR DIGITAL LIVES

- Ubiquitous ultra-broadband
- New devices and disruptive technologies
- Impact of cloud / video services in network performance
- App stores vs. mobile web browsers
- New forms of market power
- Business models different from advertising
- Context-awareness
- Response to (an excess of) targeted ads
- Use of personal information
- User expectations still unfulfilled
- Unexpected behaviours

Source: panel of mobile content and applications experts (IPTS workshop 2009)

Mobile Media Ecosystem
Opportunities and Challenges in the Mobile Media Ecosystem

Claudio Feijóo

mCommunication 2012

Mesa 2. Consumo y contenidos móviles digitales
Universitat de Vic
29-21 April 2012

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