Goldmedia Mobile Life Report 2012
Mobile Life in the 21st century
Status quo and outlook

Supported by BITKOM

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Goldmedia GmbH
Media Consulting & Research

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Goldmedia-Report “Mobile Life 2012”
Content

1. Executive Summary “Mobile Life 2012”
2. Overview: “Mobile Life”
3. Framework Conditions for “Mobile Life”
   3.1 Technical Conditions: Digital Laws of Information Technology
   3.2 Economic Parameters: Mobile Market in Germany
   3.3 Market Developments: End-User Devices
4. Customer Research and Customer Perspective - Usage Habits in Germany
5. Services and Markets for “Mobile Life”
   5.1 Mobile Entertainment
   5.2 Mobile Internet
   5.3 Mobile Advertising & Marketing
   5.4 Mobile Commerce, Payment and Ticketing
   5.5 Mobile Navigation and Location Based Services
6. Benchmark: Experiences in Japan, South Korea and Italy
7. Forecasts for “Mobile Life”
8. Outlook and Theses
1. Executive Summary: “Mobile Life 2012”
1. Executive Summary: “Mobile Life 2012”

Mobile phones are part of the everyday life!

### Importance of mobile handsets in Germany 2008

<table>
<thead>
<tr>
<th>“I agree completely / I substantially agree with the following statements:“</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I cannot imagine a life without my mobile phone.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>43.2%</td>
</tr>
<tr>
<td>I feel naked/incomplete without my mobile phone.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26.0%</td>
</tr>
<tr>
<td>My mobile phone already replaced other devices (e.g. MP3-player, camera, notepad, pen, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23.3%</td>
</tr>
<tr>
<td>With mobile phones I organise my entire private life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.6%</td>
</tr>
<tr>
<td>Add-ons (such as camera, MP3-player, organiser, etc.) are more important for me than voice telephony.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.0%</td>
</tr>
<tr>
<td>With mobile phones I organise my business life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.6%</td>
</tr>
<tr>
<td>I save all my important personal data on my mobile phone.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10.6%</td>
</tr>
</tbody>
</table>

Source: Goldmedia Online Survey 2008, n=296 (18-35 years, DE)

### Online survey

- Almost half of respondents cannot imagine a life without their mobile phone, ¼ feel “naked” without their handset.
- One quarter already replaced different devices such as MP3-players, cameras, etc. by mobile phones.
- Only ~10% use mobile handsets to organise their private and business life!

### Conclusion

- **Mobile phones are the № 4 medium in Germany right after Internet, PC and TV.**
1. Executive Summary: “Mobile Life 2012”
Communication habits and social behaviour has changed!

**Communication environment change**
- Being “always on” gives users the feeling of “being in demand” and “needed”
- Artificial creation of “public communication spaces” helps people to play down insecurity or social isolation: Every 4th confessed to having already simulated a telephone call!*

**Impacts on social behaviour**
- Rise of new business ideas such as “Fake-It”:
  - “With Fake-It, now you can make your phone receive important calls from your wife or your boss (shown as Caller ID), when you need an excuse to leave a boring meeting.”
- Social respect and appropriateness are declining: Talking by phone or listening to music in public transport, checking mails over smartphone in meetings or even answering “urgent calls” during a romantic candlelit dinner is becoming more and more normal.
- “Acoustic environmental pollution”: 69% annoyed by people talking on their phone in public, 63% bothered by ringtones!*

Source: Survey by Aris for BITKOM 2008, n=1,001 (14+ years in DE)
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   3.2 Economic Parameters: Mobile Market in Germany
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   5.2 Mobile Internet
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2. Overview: “Mobile Life”
Mobile Life encompasses all mobile B2C services & applications!

**Services, features and applications**

- **Information services** (push services e.g. news over SMS/MMS, web browser, mobile search etc.)
- **Communication services** (SMS/MMS, e-mail, (video) telephony, VoIP, instant messaging, chat etc.)
- **Multimedia** (MP3-player, videoplayer, photo camera, radio, mobile TV, etc.)
- **Personal Assistant** (address books, calendars, etc.)
- **Transaction services** (mobile commerce, mobile payment, mobile ticketing)
- **Location/position-based services** (navigation, fleet management and other location-based services)
- **Special Applications** (barcode scanner, employee locating, etc.)
- **Entertainment services** (games, communities, gambling, etc.)
- **Information memory** (...with other mobiles or other devices such as computers, laptops, MP3-players, etc. (SyncML, ActiveSync, Object Push...))
- **Data transfer/synchronisation**

**Status quo & outlook**

- **Constant development and convergence of mobile features and services**
- **Traditional services (such as SMS and voice telephony) could be cannibalised by new features and applications (such as mobile instant messaging or Voice2Text)**
- **Voice telephony still important, but data services will catch up:**

**Share of data service revenue in Western Europe 2008**

- **Data service revenue: 20%**
- **Others: 80%**

**Data service ARPU/month: 7-8 Euros**

Source: Goldmedia Analysis 2008

Source: Goldmedia Estimation 2008
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3.1 Technical conditions
Growing usability, functionality and storage capacity!

Development of mobile devices and technologies in Germany

<table>
<thead>
<tr>
<th>A-Net</th>
<th>B-Net</th>
<th>C-Net</th>
<th>D-Net</th>
<th>E-Net</th>
<th>UMTS...</th>
</tr>
</thead>
</table>

Declining size and weight, affordable prices, intuitive usability & easy handling

Increasing display resolution, growing storage capacity, integration of multi-media tools (music & video player, cameras, etc.)

Source: Goldmedia / Focus Handygeschichte 2008
3.1 Technical conditions
Data transfer rate increases as transmission time declines!

### Development of data transfer rates

<table>
<thead>
<tr>
<th>Year</th>
<th>GSM</th>
<th>HSCSD</th>
<th>GPRS</th>
<th>EDGE</th>
<th>UMTS</th>
<th>HSDPA</th>
<th>LTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>9.6-14.4 kbit/s</td>
<td>14.4-57.6 kbit/s</td>
<td>9.0-107 kbit/s</td>
<td>48.8-384 kbit/s</td>
<td>up to 2 Mbit/s</td>
<td>7.2 Mbit/s</td>
<td>50 Mbit/s</td>
</tr>
<tr>
<td>2000</td>
<td>9.6-14.4 kbit/s</td>
<td>14.4-57.6 kbit/s</td>
<td>9.0-107 kbit/s</td>
<td>48.8-384 kbit/s</td>
<td>up to 2 Mbit/s</td>
<td>7.2 Mbit/s</td>
<td>50 Mbit/s</td>
</tr>
<tr>
<td>2008</td>
<td>9.6-14.4 kbit/s</td>
<td>14.4-57.6 kbit/s</td>
<td>9.0-107 kbit/s</td>
<td>48.8-384 kbit/s</td>
<td>up to 2 Mbit/s</td>
<td>7.2 Mbit/s</td>
<td>50 Mbit/s</td>
</tr>
</tbody>
</table>

### Upgrade of standards

- A-, B- and C-net = analogue nets
- D and E-net first digital nets with GSM standard (2G): rollout in 1992 led to a rapid diffusion of mobile telephony. Over 80% (~3bn people in <200 countries) use GSM.
- GSM upgrades: GPRS, EDGE (EDGE Evolution), CSD (HSCSD)
- Launch of UMTS (3G) in Germany:
  - auction of licenses in 2000 (~50bn €)
  - 1st commercial offers in 2004
- UMTS Upgrades: HSPA (High Speed Packet Access), HSDPA, HSUPA, HSPA+
- Coming soon: LTE (Long Term Evolution) and HSOPA (Super 3G and 4G)

### Transmission time by channel

<table>
<thead>
<tr>
<th>Channel</th>
<th>0 sec</th>
<th>10 sec</th>
<th>1 min</th>
<th>10 min</th>
<th>1 hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMTS</td>
<td>e-mail</td>
<td>report</td>
<td>video clip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSM 2+</td>
<td>e-mail</td>
<td>photo</td>
<td>report</td>
<td>video clip</td>
<td></td>
</tr>
<tr>
<td>ISDN</td>
<td>e-mail</td>
<td>web</td>
<td>photo</td>
<td>report</td>
<td>video clip</td>
</tr>
<tr>
<td>PSTN*</td>
<td>e-mail</td>
<td>web</td>
<td>photo</td>
<td>report</td>
<td>video clip</td>
</tr>
<tr>
<td>GSM Phase 1</td>
<td>e-mail</td>
<td>web</td>
<td>photo</td>
<td>report</td>
<td>video clip</td>
</tr>
</tbody>
</table>

Source: Goldmedia / UMIT Innsbruck 2007

### Conclusion

- Transmission time dropped from hours to seconds! Data transfer rates increased from 9.6 kbit/s to 25Mbit/s within 16 years!
- Data rates double every year!
3.2 Economic parameters: Mobile market
High penetration and strong market power of MNOs in DE!

### Summary

- Mobile subscriptions doubled within seven years (2000-2007).
- Mobile penetration: more than 125% in Q2/2008!
- Figures of inactive members (e.g. un-used but registered SIM cards from prepaid providers) are included.
- Significant growth in 3G subscriber figures since rollout of UMTS services in 2005 in Germany.
- Strong market power of the MNOs: E-Plus, T-Mobile, Vodafone and O2 share 75% of the entire market!
3.2 Economic parameters: Mobile market
Shrinking ARPU and revenue in Germany!

Total mobile revenues in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Revenues (in billion Euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>20.27</td>
</tr>
<tr>
<td>2001</td>
<td>22.62</td>
</tr>
<tr>
<td>2002</td>
<td>23.57</td>
</tr>
<tr>
<td>2003</td>
<td>25.27</td>
</tr>
<tr>
<td>2004</td>
<td>27.33</td>
</tr>
<tr>
<td>2005</td>
<td>27.25</td>
</tr>
<tr>
<td>2006</td>
<td>26.87</td>
</tr>
<tr>
<td>2007</td>
<td>25.02</td>
</tr>
</tbody>
</table>


Development of ARPU in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>ARPU in Euros/Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>25.30</td>
</tr>
<tr>
<td>2003</td>
<td>26.0</td>
</tr>
<tr>
<td>2004</td>
<td>24.0</td>
</tr>
<tr>
<td>2005</td>
<td>23.0</td>
</tr>
<tr>
<td>2006</td>
<td>18.0</td>
</tr>
<tr>
<td>2007</td>
<td>17.0</td>
</tr>
<tr>
<td>2008</td>
<td>16.0</td>
</tr>
</tbody>
</table>

Conclusion

- Decrease in total mobile revenues while subscriber figures still grow.
- ARPU (Average Revenue Per User) declines constantly, CAGR -6.6%
- ARPU: Loss of 8.50 € (one third!) within six years from 2002-2008 due to the market entry of mobile discounters such as Simyo, Blau, Fonic, callmobile, Congstar, etc.) since 2005.

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3.3 Market development end user devices
Mobile and smartphones are more popular than PDAs!

Development of mobile devices

- **Mobile phone**
  - 32m smartphones sold worldwide in Q1/2008**
  - 291.6 m mobile devices sold worldwide in Q1/2008*

- **Smartphone**
  - 720,000 PDAs sold worldwide in Q2/2007***

- **PDA**
  - 31.1m laptops sold worldwide in Q1/2008****

- **Laptop**

Results

- Mobile phones, smartphones and laptop sales increasing, PDA losing more and more market share.
- Worldwide, 11% of mobile handsets sold in 2007 were smartphones.
- Diversification of functions and forms has blurred the boundaries between mobile devices.
- Trends: multimedia mobile phones with focus on mobile TV, radio, music, gaming, etc. (e.g. iPhone), organizers with web browser and office applications (e.g. BlackBerry), mobile navigation devices (e.g. Nuvifone)

Conclusions

- Trend is towards specialised mobile devices! Mobile market characterised by short life cycles of mobile devices & enormous demand for innovation!

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4. Usage habits in Germany
Mobile music, games and internet most popular functions!

**Usage of m-entertainment services in DE 2008**

```
<table>
<thead>
<tr>
<th>Application/Function</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone</td>
<td>96%</td>
</tr>
<tr>
<td>Send SMS</td>
<td>92%</td>
</tr>
<tr>
<td>Take photos</td>
<td>58%</td>
</tr>
<tr>
<td>Watch photos</td>
<td>58%</td>
</tr>
<tr>
<td>Listen to music</td>
<td>52%</td>
</tr>
<tr>
<td>Play games</td>
<td>48%</td>
</tr>
<tr>
<td>Surf the Internet</td>
<td>36%</td>
</tr>
<tr>
<td>Write e-mails</td>
<td>33%</td>
</tr>
<tr>
<td>Send photos/pics/videos via MMS, …</td>
<td>30%</td>
</tr>
<tr>
<td>Pay bills</td>
<td>27%</td>
</tr>
<tr>
<td>Upload music on my mobile</td>
<td>26%</td>
</tr>
<tr>
<td>Use navigation services</td>
<td>23%</td>
</tr>
<tr>
<td>Upload photos/pictures on my mobile</td>
<td>20%</td>
</tr>
<tr>
<td>Chat</td>
<td>19%</td>
</tr>
<tr>
<td>Use LBS</td>
<td>14%</td>
</tr>
<tr>
<td>Upload videos on my mobile</td>
<td>13%</td>
</tr>
<tr>
<td>Visit blogs</td>
<td>12%</td>
</tr>
<tr>
<td>Upload games on my mobile</td>
<td>12%</td>
</tr>
<tr>
<td>Upload ringtones on my mobile</td>
<td>12%</td>
</tr>
<tr>
<td>Watch mobile TV</td>
<td>7%</td>
</tr>
</tbody>
</table>
```

Basis: Men and women in DE between 18-35 years (n=296)

**Conclusions**

- The Goldmedia Online Survey proves that voice telephony is still the most-frequently used function on mobile handsets (96%).
- SMS is the № 1 non-voice-application (92%).
- More than half of all respondents take and view photos or listen to music at least once a month.
- Less than 50% play mobile games regularly, about 1/3 uses internet & write e-mails at least once a month.
- Navigation services and LBS are not very popular yet.
- Mobile TV brings up the rear of all mobile entertainment services investigated (7%).

Source: Goldmedia Online Survey 2008, n=296 (18-35 years, DE)
4. Usage habits in Germany
Young consumers love mobiles, SMS favourite data service!

**Mobile phone usage in DE**

Spread between age groups in DE 2001-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>14-19 years</th>
<th>20-29 years</th>
<th>30-39 years</th>
<th>40-49 years</th>
<th>50-59 years</th>
<th>60+ years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2007</td>
<td>10%</td>
<td>17%</td>
<td>19%</td>
<td>22%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>1/2005</td>
<td>10%</td>
<td>16%</td>
<td>22%</td>
<td>21%</td>
<td>14%</td>
<td>16%</td>
</tr>
<tr>
<td>3/2003</td>
<td>11%</td>
<td>17%</td>
<td>24%</td>
<td>21%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>3/2001</td>
<td>12%</td>
<td>20%</td>
<td>26%</td>
<td>20%</td>
<td>13%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: VA 2007

**Development of talk time & SMS**

...2000-2007 in DE in bn minutes / bn units

- Outgoing calls (in min.)
- SMS (sent)

<table>
<thead>
<tr>
<th>Year</th>
<th>Outgoing calls</th>
<th>SMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>25.00</td>
<td>11.4</td>
</tr>
<tr>
<td>2001</td>
<td>30.13</td>
<td>17.1</td>
</tr>
<tr>
<td>2002</td>
<td>31.93</td>
<td>18.4</td>
</tr>
<tr>
<td>2003</td>
<td>35.09</td>
<td>19.0</td>
</tr>
<tr>
<td>2004</td>
<td>38.47</td>
<td>19.7</td>
</tr>
<tr>
<td>2005</td>
<td>43.00</td>
<td>22.3</td>
</tr>
<tr>
<td>2006</td>
<td>57.11</td>
<td>22.2</td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td>22.4</td>
</tr>
</tbody>
</table>


**Top 10 mobile phone features**

Most frequently-used add-ons, 14+ years in DE 2008

<table>
<thead>
<tr>
<th>Feature</th>
<th>0%</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address book</td>
<td>54.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera</td>
<td></td>
<td>48.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm clock</td>
<td></td>
<td>40.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calendar</td>
<td></td>
<td>37.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculator</td>
<td></td>
<td>36.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>28.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Games</td>
<td>19.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading e-mails</td>
<td>13.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing e-mails</td>
<td>13.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: BITKOM/Aris, DE 2008, n=1001

**Conclusions**

- Young consumers (14-29 years) are an attractive target group with ~13m users.
- Due to demographic change, more and more elderly people (40+) use mobile phones → Challenge: services and mobile devices should be adjusted for different target and age groups!
- Most-used features (after voice telephony): SMS, address book and camera.
- Development of SMS sent (2000-2007): 11.4-22.4bn

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5.1 Mobile entertainment
2/3 of 15-27 year olds cannot live without their mobile!

Comparison of generations: Media preferences in the USA 2007

Research question: “I cannot live without...”
Basis: Men and women between 15-54 years

Conclusions

- The youngest age group has the strongest ties to mobile handsets!
- People prefer media with which they grew up: Mobile technology, internet and games among 15-24 year olds.
- 41-54 year olds rather use traditional media such as TV, radio or print products.
5.1 Mobile TV and mobile radio
Radio is popular! Mobile TV (DMB/DVB-H) failed in DE!

**Most frequently-used data services**

**Most frequently-used data service in DE 2008**

- **SMS**: 84.1%
- **MMS**: 34.3%
- **Music download**: 15.2%
- **Mobile Internet**: 13.7%
- **E-Mail**: 5.6%
- **Others***: 2.3%

*navigation, video download, Mobile TV

Without SMS

**Most frequently-used data service in DE 2008 (besides SMS)**

- **Music download**: 15.2%
- **Mobile Internet**: 13.7%
- **E-Mail**: 5.6%
- **Mobile Navigation**: 1.1%
- **Video download**: 0.7%

Source: "Mobilfunk-Nutzungsverhalten in Deutschland 2008", TNS Infratest /E-Plus Group, n=1,502

**Interest in mobile radio and TV 2006**

“Do you intend to use commercial mobile TV and mobile radio services in future?”

<table>
<thead>
<tr>
<th></th>
<th>Mobile TV</th>
<th>Mobile radio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most likely</td>
<td>12%</td>
<td>22%</td>
</tr>
<tr>
<td>Likely</td>
<td>37%</td>
<td>42%</td>
</tr>
<tr>
<td>Unlikely</td>
<td>28%</td>
<td>7%</td>
</tr>
<tr>
<td>Definitely not</td>
<td>7%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: SOF 2006, n=180 in DE

**Conclusions**

- Radio is part of media-usage habit!
- Video downloads are not very relevant; mobile TV is still in its infancy: 32% of the users are not interested at all, almost ½ would not accept extra costs*
- watcha! (1st commercial mobile TV over DMB, launched in May 2006) shut down its service in May 2008; Mobile 3.0 (German consortium which planned to launch a mobile TV subscription service over DVB-H) ceased before its start in mid 2008
- Mi Friends trial and commercial offers (S-DMB in South Korea) show high uptake of mobile radio services

*Source: "Mobile usage habits in Germany 2008", TNS Infratest /E-Plus Group, n=1,502
5.1 Mobile games
Moderate growth in DE, pre-installed games are preferred!

Mobile games revenue by region

<table>
<thead>
<tr>
<th>Region</th>
<th>2007</th>
<th>2011e</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>0.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Western Europe</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Asia/Pacific</td>
<td>1.8</td>
<td>4.6</td>
</tr>
</tbody>
</table>

*Source: Gartner 2007 e=estimation

Japan is the largest market with 2.3bn US$ revenue in 2008!

Mobile games revenue in Germany

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales in million downloads</th>
<th>Revenue in million Euros</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>10.6 (€)</td>
<td>35.8 (€)</td>
</tr>
<tr>
<td>2005</td>
<td>14.9 (€)</td>
<td>53.8 (€)</td>
</tr>
<tr>
<td>2006e</td>
<td>15.0 (€)</td>
<td>54.0 (€)</td>
</tr>
</tbody>
</table>

*Source: BITKOM/GfK 2007 e=estimation

Status quo

- In Q2/2008, worldwide ~10.9m people used their mobile phone for playing mobile games*.
- Only 5.8% of the total amount of digital gamers in Germany (which make out more than 1/3 of all gamers) use their mobile handset for playing!**
- Special mobile-gaming end-user devices (a mix between games consoles and mobile phones) are less than successful.
- Challenge: Adjustment of games to make them compatible for every end-user device.

Mobile games advertising

- Revenue from ad-financed mobile games is estimated to grow from 97m US$ (2007) to 1.3bn US$ (2012) worldwide*.
- This kind of advertising will become popular and accepted by users. It could boost usage of mobile games.

*Source: eMarketer 2008

Nokia N-Gage

*Source: ComScore 2008, **BITKOM/Ipsos 2008
5.1 Mobile games

Users prefer classic games! EA Mobile is the market leader.

Mobile games market share

...by company, worldwide 2006

- EA Mobile: 29%
- Glu Mobile: 10%
- Gameloft: 9%
- Hands on Mobile: 7%
- I-Play: 7%
- Namco: 6%
- Others: 32%

Source: M:Metrics 2006

Development of mobile games

- Since Nokia’s implementation of the first mobile game “Snake” there has been a constant development of new mobile games.
- Top mobile games download lists show that users prefer simple and classic games on their mobile phones!

Top 5 mobile games

Most downloaded games, worldwide 2006

1. Tetris (EA Mobile)
2. Bejeweled (EA Mobile)
3. Platinum Solitaire (Gameloft)
4. World Poker (Hands on Mobile)
5. Pac-Man (Namco)

Source: M:Metrics 2006

Conclusions

- Simple and classic games dominate the mobile games market.
- Users are not willing to “pay to play”, they prefer pre-installed or ad-sponsored (i.e., free of charge) games.
5.1 Mobile social networks & communities

Social networks: Drivers of the mobile internet?

**Users of mobile social networks**

...in million users and % of mobile phone subscribers, Forecast: 2007-2012 (worldwide)

- **Summary**
  - Estimated global revenue in 2012: 28.9-52bn US$*
  - 12.3m users in 2007 in the USA and Western EU**
  - Mobile social communities and networks are among the most popular mobile applications: 40% of the entire mobile internet traffic worldwide goes to social networks***
  - Leading mobile social networks (worldwide): MySpace Mobile, Facebook, airG, Mocospace, myGamma, itsmy.com
  - High market potential in Germany! Boom of new mobile social networks such as Aka-Aki (launched in March 2008), Qeep, Gofresh (itymy.com), Rock-it-mobile, etc.

**German-speaking networks**

<table>
<thead>
<tr>
<th>Network</th>
<th>Mobile?</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>StudiVZ/SchülerVZ/MeinVZ</td>
<td>no</td>
<td>-</td>
</tr>
<tr>
<td>Wer-Kennt-Wen</td>
<td>no</td>
<td>-</td>
</tr>
<tr>
<td>Lokalisten</td>
<td>yes</td>
<td>German</td>
</tr>
<tr>
<td>SchülerCC/SchülerRegister</td>
<td>no</td>
<td>-</td>
</tr>
<tr>
<td>Kwick!</td>
<td>partly</td>
<td>German</td>
</tr>
<tr>
<td>Jappy</td>
<td>yes</td>
<td>German</td>
</tr>
<tr>
<td>XING</td>
<td>yes</td>
<td>German</td>
</tr>
<tr>
<td>MySpace/ Facebook</td>
<td>yes</td>
<td>English</td>
</tr>
<tr>
<td>Orkut</td>
<td>yes</td>
<td>German</td>
</tr>
<tr>
<td>Twitter</td>
<td>yes</td>
<td>English</td>
</tr>
<tr>
<td>Friendster</td>
<td>yes</td>
<td>English</td>
</tr>
<tr>
<td>Bebo</td>
<td>partly</td>
<td>English</td>
</tr>
<tr>
<td>Netlog</td>
<td>yes</td>
<td>German (+20 other languages)</td>
</tr>
</tbody>
</table>

**Conclusion**

- Mobile social networks could be an opportunity to drive mobile internet usage to a level comparable with online internet usage!

* Worldwide forecast by Informa/PERREY „Mobile Social Networking“ 2008,
**Source: M:Metrics June 2007,
***Source: Opera „State of the Mobile Web“ 2008
5.1 Mobile music
Further growth due to flat rate business models?

### Conclusion

- The German music download market is limited due to illegal download services.
- Nevertheless, there is a constant (but limited) growth in download and revenue figures.
- Share of mobile downloads is about 10% of the total downloads.
- Share of mobile music revenue in relation to total music download revenue is about 10% as well.
- Further growth in mobile music revenue is possible - induced by flat fees.

### Paid music downloads in Germany 2004-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>Total music downloads</th>
<th>Share of mobile music downloads</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>2005</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>2006</td>
<td>11%</td>
<td>21%</td>
</tr>
<tr>
<td>2007</td>
<td>13%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Source: Bitkom/GfK Panel Services/Goldmedia 2007

### Mobile music revenues in Germany 2004-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>Music download revenues</th>
<th>Mobile Music download revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>15</td>
<td>0.1</td>
</tr>
<tr>
<td>2005</td>
<td>39</td>
<td>3.4</td>
</tr>
<tr>
<td>2006</td>
<td>54</td>
<td>5.1</td>
</tr>
<tr>
<td>2007</td>
<td>68</td>
<td>8.0</td>
</tr>
</tbody>
</table>

CAGR 2004-2007: +66%

Source: Bitkom/GfK Panel Services/Goldmedia 2007
5.1 Mobile music  
Ringtones – Decline after the hype?

Reasons and consequences

- **Realisation**: Ringtones are high priced goods!
- **Opportunity of user-created ringtones rises** (usage of music files for ring tones)!
- **Results**: Interest in purchasing ringtones wanes! Shrinkage of 6.6m units within only one year! Declining profitability of ringtone aggregators such as Jamba/Jamster, Musiwave & Co.
- **Uptrend** of personalised entertainment service which allows subscribers to replace a standard ringback tone with a melody or voice message.
- **Consequence**: Many players expand their core businesses into music, video, information services, games or magic tricks!

Ringtone usage in UK/DE/US 2006

Ringtone downloads in DE 2006-07

- **Source**: M:Metrics 2007. Survey of mobile subscribers. Data based on three-month moving average for period ending 30 November, 2006, n=14,612 (DE), 14,907 (UK) and 33,736 (US)

- **Source**: BITKOM 2008
5.1 Mobile music
Sideloading could menace new business models!

Rise of new business models: music flatrates for mobiles


- Business model: purchase of a mobile device together with a 1-year music flatrate; for another 1-year flatrate the customer needs to purchase a new mobile handset.

- Estimated willingness to pay lies between 125 and 376 Euros per year.

Sideloads vs. downloads

- Definition: Sideloading allows users to transfer music via data cable, WiFi or Bluetooth bypassing the carrier-sanctioned mobile download.

<table>
<thead>
<tr>
<th>Source of mobile music consumption as percentage of active listeners, DE Nov. 2007</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transferred from PC</td>
<td>88.7%</td>
</tr>
<tr>
<td>Transferred from friends/family</td>
<td>8.8%</td>
</tr>
<tr>
<td>Downloaded from music service</td>
<td>7.6%</td>
</tr>
<tr>
<td>Others</td>
<td>2.9%</td>
</tr>
</tbody>
</table>

Conclusions

- Sideloading music is by far the most popular way to consume music over mobile phones so far.

- Sideloading music via PC instead of downloading it directly on mobile phones is responsible for about 90 per cent of the mobile music consumption.

- Subscription models highly attractive for music industry.

- No paid services are existing today: If major operators and device manufacturers introduce mobile paid music services esp. by flat fees, high customer demand can be expected.

- Mobile music market development and potentials can be estimated when first lessons are learned with new mobile music business models.
Goldmedia-Report “Mobile Life 2012”

Content

1. Executive Summary “Mobile Life 2012”
2. Overview: “Mobile Life”
3. Framework Conditions for “Mobile Life”
   3.1 Technical Conditions: Digital Laws of Information Technology
   3.2 Economic Parameters: Mobile Market in Germany
   3.3 Market Developments: End-User Devices
4. Customer Research and Customer Perspective - Usage Habits in Germany
5. Services and Markets for “Mobile Life”
   5.1 Mobile Entertainment
   5.2 Mobile Internet
   5.3 Mobile Advertising & Marketing
   5.4 Mobile Commerce, Payment and Ticketing
   5.5 Mobile Navigation and Location Based Services
6. Benchmark: Experiences in Japan, South Korea and Italy
7. Forecasts for “Mobile Life”
8. Outlook and Theses
5.2 Mobile internet
Number of 3G phones grows, but Germany sluggish!

Mobile internet usage

<table>
<thead>
<tr>
<th>Country</th>
<th>0%</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.6%</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
<td></td>
<td>12.9%</td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td></td>
<td></td>
<td>11.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RU</td>
<td></td>
<td></td>
<td>11.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ES</td>
<td></td>
<td></td>
<td>10.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TH</td>
<td></td>
<td></td>
<td>10.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FR</td>
<td></td>
<td></td>
<td>9.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td></td>
<td></td>
<td>7.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CN</td>
<td></td>
<td></td>
<td>6.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BR</td>
<td></td>
<td></td>
<td>2.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN</td>
<td></td>
<td></td>
<td>1.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NZ</td>
<td></td>
<td></td>
<td>1.6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

...worldwide 2007, penetration in %

Mobile subscribers in Germany 2007

<table>
<thead>
<tr>
<th>Category</th>
<th>Subscribers</th>
<th>internet-phones*</th>
<th>UMTS subscribers</th>
<th>internet usage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source: Goldmedia, BITKOM 2008, *Mobile Web Watch 2008 - internet usage figures are equivalent to a 13% usage penetration of 26m users equipped with internet capable mobiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>97.2</td>
<td>26.0</td>
<td>10.4</td>
<td>3.4</td>
<td></td>
</tr>
</tbody>
</table>

Summary

- Leading countries for mobile internet penetration: USA, UK and Italy. Delay in Germany: Only 7.4% of all mobile phone owners use mobile internet.
- 26m Germans own an internet-ready mobile phone! But only 13% of them use it!* 
- Diffusion of 3G handsets began late.
- Reasons for reluctance to adopt mobile internet in Germany: price models of M(V)NOs, inadequate equipment, slow site load time, lack of user friendliness, poor site navigation

*Source: Mobile Web Watch 2008
5.2 Mobile internet
E-mails, news and mobile search (navigation) are popular!

Survey: Favourite online contents

...for mobile usage, Germans 14+ years 2007

<table>
<thead>
<tr>
<th>Contents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directions/navigation</td>
<td>36%</td>
</tr>
<tr>
<td>Traffic jam alert</td>
<td>31%</td>
</tr>
<tr>
<td>News</td>
<td>26%</td>
</tr>
<tr>
<td>Time tables</td>
<td>26%</td>
</tr>
<tr>
<td>Weather information</td>
<td>24%</td>
</tr>
<tr>
<td>Sport results</td>
<td>16%</td>
</tr>
<tr>
<td>Auctions/shopping</td>
<td>9%</td>
</tr>
<tr>
<td>Podcasts/videos</td>
<td>6%</td>
</tr>
<tr>
<td>Online-Communities</td>
<td>6%</td>
</tr>
<tr>
<td>Lottery results</td>
<td>5%</td>
</tr>
</tbody>
</table>

Top 10 mobile websites (DE June 2008)*:
Google, Yahoo!, Wikipedia, Sport1, studivz.net, spiegel.de, ebay.de, youtube.com, wetter.com, web.de

Preferred contents

“Which traditional internet contents do you use on your mobile?” (DE 2008)

<table>
<thead>
<tr>
<th>Contents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>54%</td>
</tr>
<tr>
<td>News</td>
<td>44%</td>
</tr>
<tr>
<td>Weather</td>
<td>32%</td>
</tr>
<tr>
<td>Travel/Traffic</td>
<td>30%</td>
</tr>
<tr>
<td>Online Auction</td>
<td>25%</td>
</tr>
<tr>
<td>Price comparison</td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: “Going Mobile” 2008 (Microsoft Advertising/M:Metrics).

Conclusions

- Different reports – different results: Are e-mails or navigation services the most wanted mobile internet contents?
- Opera’s Top 10 list shows: Mobile search, e-mails and social communities are the favourite mobile contents!
- Mobile social networks and mobile search should prove to be the drivers of mobile internet
5.2 Mobile Internet: Mobile search
Mobile search will grow with 3G penetration.

**Variety of mobile search services**
- Search engines such as Google, Yahoo!, taptu, Nokia mobile search, etc.
- Directory enquiry services
- Q&A services (e.g. Question Mania, AskMeNow, which is based on semantic web technology, etc.)
- Mobile navigation services

**Market shares of mobile search providers**

- **Google** 61%
- **Yahoo!** 18%
- **MSN** 5%
- Others 16%

*Source: Nielsen Mobile 2008, n=1m

**Conclusions**

- As of Sep. 2008, the largest part of mobile search revenue is generated by provider fees for data transmission! Target: Increase in advertising revenue!
- Google Search dominates almost 2/3 of the worldwide mobile search market.
- Mobile search will become a growth market: 1.3bn users and 8bn US$ estimated by 2013 (worldwide).*

*Source: Juniper Research 2Mobile Search & Discovery 2008-2013*

- With increasing penetration of internet-ready 3G phones, mobile search will be used more and more!
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## 5.3 Mobile advertising & marketing

Global ad market should grow to 14bn US$ by 2011.

### Types of mobile marketing

<table>
<thead>
<tr>
<th>Mobile advertising</th>
<th>Pull</th>
<th>Mobile internet advertising</th>
<th>Types: banner ads on online portals, target-word marketing, mobile TV &amp; radio, games, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile permission marketing (MPM)</td>
<td>Push</td>
<td>Mailing of advertising messages provided that the user declared their approval</td>
<td>Types: mobile couponing, SMS/MMS, voice cards, etc.</td>
</tr>
<tr>
<td>Mobile direct response marketing (MDRM)</td>
<td>Pull</td>
<td>Initiated by the mobile phone user whose attention is caught by a classic advertising medium such as a poster, magazine, TV-spot, etc.</td>
<td>Types: SMS/MMS, voice cards, newsletter, mobile couponing, etc.</td>
</tr>
</tbody>
</table>

### Growing global market

- Estimated volume for mobile advertising in 2011: over 14bn US$!
- Display and mobile search advertising are estimated to make up the largest part of advertising revenues within the next years!

### Forecast: Worldwide volume of the mobile ad market in bn US$ per ad type

<table>
<thead>
<tr>
<th>Year</th>
<th>Co-branded give-aways</th>
<th>Interstitials</th>
<th>Mobile Promotion Link</th>
<th>Mobile Sponsoring</th>
<th>Mobile Textbook</th>
<th>Mobile Content</th>
<th>Mobile Couponing</th>
<th>SMS/MMS</th>
<th>Voice cards</th>
<th>Newsletter</th>
<th>Mobile Mailing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>4.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>7.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>10.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>14.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Goldmedia/Mobile Research Guide 2008

Source: Strategy Analytics "Global Mobile Advertising Updates" 2007 e=estimation

Source (pictures): Homepage Arvato Mobile, www.impactlab.com
5.3 Mobile advertising & marketing
Mobile advertising as a financial basis of Mobile Life.

Mobile marketing spending in DE
...in billion Euros per category, Forecast: 2005-2010

- M DRM
- MPM
- Mobile ads

<table>
<thead>
<tr>
<th>Year</th>
<th>M DRM</th>
<th>MPM</th>
<th>Mobile ads</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>0.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>1.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Mobile ad market volume in DE
...per category in million Euros (gross), Forecast: 2007-2011

- Affiliate marketing
- Mobile search advertising
- In-game advertising
- Direct marketing (SMS/MMS)
- Display advertising

<table>
<thead>
<tr>
<th>Year</th>
<th>Affiliate marketing</th>
<th>Mobile search advertising</th>
<th>In-game advertising</th>
<th>Direct marketing</th>
<th>Display advertising</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>414</td>
<td>640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>514</td>
<td>393</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>393</td>
<td>232</td>
<td></td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>2008</td>
<td>232</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>119</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: TOMORROW FOCUS “Analyse zur Zukunft von Mobile Media” 2007, e=estimation

Recognition
“Have you ever noticed mobile advertising?”

- Yes, but I didn’t pay further attention 33%
- Yes, I clicked on a banner ad 31%
- No, I never mentioned ads before 36%

Source: Thirdscreen Online-Survey 2008, DE, n=258

Conclusions
- Due to the close ties between users and their mobile phones there is a high potential for mobile advertising as part of the marketing mix!
- Mobile ads could be used for effective CRM!
- **Mobile advertising is the financial basis of a lot of other mobile life services based on the mobile internet.**
Goldmedia-Report “Mobile Life 2012”

Content

1. Executive Summary “Mobile Life 2012”
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   3.3 Market Developments: End-User Devices
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5. Services and Markets for “Mobile Life”
   5.1 Mobile Entertainment
   5.2 Mobile Internet
   5.3 Mobile Advertising & Marketing
   5.4 Mobile Commerce, Payment and Ticketing
   5.5 Mobile Navigation and Location Based Services
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7. Forecasts for “Mobile Life”
8. Outlook and Theses
5.4 Mobile commerce, payment & ticketing
Mobile ticketing as top 1 mobile commerce service.

**Preferred product categories in DE 2008**

```
<table>
<thead>
<tr>
<th>Product Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tickets (transport e.g. train, aeroplane)</td>
<td>76%</td>
</tr>
<tr>
<td>Tickets (e.g. theater, cinema, events)</td>
<td>68%</td>
</tr>
<tr>
<td>Books</td>
<td>61%</td>
</tr>
<tr>
<td>DVDs/CDs</td>
<td>60%</td>
</tr>
<tr>
<td>Flowers</td>
<td>44%</td>
</tr>
<tr>
<td>Clothing</td>
<td>37%</td>
</tr>
<tr>
<td>Food</td>
<td>33%</td>
</tr>
</tbody>
</table>
```

*Source: Lightspeed Research “Wählen Sie S für Shopping” 2008*

**Conclusions**

- The most popular mobile commerce service is mobile ticketing!
- 3 of 4 people are willing to order their tickets for public transport, flights or cultural events via mobile phone.
- Juniper Research estimation: over 2.6bn mobile tickets will be delivered to over 208m mobile phone users by 2011.
5.4 Mobile commerce, payment & ticketing
75% of Germans are not interested in m-commerce!

**Consumer acceptance in DE 2008**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>67%</td>
<td>84%</td>
</tr>
<tr>
<td>Rarely</td>
<td>16%</td>
<td>28%</td>
</tr>
<tr>
<td>At least once a month</td>
<td>11%</td>
<td>23%</td>
</tr>
<tr>
<td>Al least once a week</td>
<td>13%</td>
<td>25%</td>
</tr>
<tr>
<td>Daily</td>
<td>3%</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Usage of mobile payment in DE 2008**

**Conclusions**

- Most open-minded target groups are men and the age group between 18-34 years! 33% of them would buy products via mobile devices. Only every 6th woman is interested in m-commerce.
- Problem: There is no service available yet. If it is possible to pay by phone, a higher acceptance of mobile payment will probably occur.
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Content

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2. Overview: “Mobile Life”
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   3.1 Technical Conditions: Digital Laws of Information Technology
   3.2 Economic Parameters: Mobile Market in Germany
   3.3 Market Developments: End-User Devices
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   5.1 Mobile Entertainment
   5.2 Mobile Internet
   5.3 Mobile Advertising & Marketing
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5.5 Mobile navigation & location-based services

Fierce competition between manufacturers!

GPS-equipped mobile handsets

...in millions, 2004-2011 (worldwide forecast)

Source: Forecast iSupply Corp. 2007 e=estimation

CAGR +50.6%

Market situation

- Fierce competition between classic navigation device manufacturers such as TomTom, Garmin, etc. and mobile phone manufacturers.

  - Garmin’s nüviphone
  - Nokia’s 6110 Navigator

- Market characterised by mergers and acquisitions.
- № 1 mobile device manufacturer Nokia boosts its navigation services: In October 2007 Nokia bought the US map service Navteq for 5.7bn US$.
- Navteq offers digital maps for navigation devices for 69 countries on six continents.
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Content

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   5.3 Mobile Advertising & Marketing
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Keichu ("addiction") and Otaku ("life in a virtual world")

Mobile Life in Japan – Extension to all aspects and areas of life

- 41% of Japanese use their mobile devices even in the bathtub!

- The number-one bathtub application: e-mail, followed by music and gaming!

Source: Sega Survey 2008, n=16,250
6. Benchmark
Japan: the world’s leading mobile music & games market!

**Mobile music market in Japan 2007**
- Japanese people prefer downloading music tracks directly to their mobile phones (Comparison: German users prefer to sideload music!)
- Mobile music downloads make up more than 93% of all music downloads (90% of all digital music sales!)
- Fastest growing sub-category: single track downloads (51% (=320m US$) of total mobile music sales)
- Service model of LISMO! (KDDI): Cross-platform (mobile & PC), 2.50 US$/track, downloads can be used as ringtones

**Mobile games market in Japan**

| Mobile games average downloads/month (all mobile internet users) Japan 2006 |
|----------------------------------|-------------------|
| >5/month                        | 2%                |
| 1-4/month                       | 36%               |
| <1/month                        | 33%               |
| never                           | 29%               |

- Over 70% download mobile games regularly at least once a month! 44% of the active gamers prefer short games*

**Summary**
- Lively “Mobile Life” market in Japan: High popularity and usage of mobile downloaded music and games!
- Evident displacement of leisure activities such as listening to music, playing games, reading, etc. into the “Mobile life”
- 2G phones are not shipped anymore by 2008
- Reasons: rapid diffusion of 3G, availability of adjusted mobile devices & attractive business models – plus very low data prices!
6. Benchmark
South Korea: Success of DMB mobile TV & radio services

**Development of mob. TV users in KR**

- **T-DMB**
- **S-DMB (encoded)**

Source: TU Media Corp. (2005)/SK Telecom/MIC

**S-DMB use in Korea in 2006**

- Use in minutes:
  - Mon: 59
  - Tue: 63
  - Wed: 64
  - Thu: 62
  - Fri: 59
  - Sat: 56
  - Sun: 49

- Ø 58.9 min ≈ 1 h/day!

Source: TU Media Corp. (2006)/SK Telecom

**Preferred contents for mobile TV**

- Drama
- Games
- CH.Blue
- Music
- Movies
- Sport
- News

Preferred content: drama!

Source: SK Telecom 2006

**Conclusions**

- First mover worldwide, high penetration with end-user devices
- Commercial S-DMB services (Pay TV) started in May 2005, the commercialization of T-DMB (Free TV) followed in Dec. 2005.
- Number of clients using free of charge T-DMB offers are increasing faster, but estimation of 21m mobile TV users by 2012 seems not to be realistic.
6. Benchmark
3 Italia’s Mobile TV started with Pay-TV+switched to Free TV!

Development of mobile TV users in IT

DVB-H coverage in IT 2008

- 85% coverage for mobile TV services due to 3 Italia’s own outdoor DVB-H net
- MNO possesses content and infrastructure!
- 3 Italia offers end-to-end services = “Market maker”

Service of 3 Italia in Q3/2008

- Programming: 12 channels (public channels, four Mediaset channels, 3 own 3 Italia channels)
- Since June 2008 3 Italia implemented a new cross-media strategy: the company offers selected DVB-H channels (RAI 1, RAI 2, Mediaset, Sky Meteo 24, Current TV and La3) and internet for free!

Conclusions

- 3 Italia began services in Italy in 2000, in June 2008 they had 8.2m 3G subscribers.
- Launch of mobile TV services: June 2006
- Different business models: Pay TV, Free-to-Air, Pay-per-view (daily, weekly or monthly) packages, with or without other services included, e.g. mobile TV at 4€/day, 9€/week, 19€/month or 29€ for 3 months
6. Benchmark – Summary
Technologic & cultural factors lead to different use habits!

**Results**
- The Japanese use their mobile phones as a “personalised medium” with internet access. 91% of all music revenues generated by mobile (IT: 56%, DE: 31%).
- NTT DoCoMo was the world’s first 3G operator in 2001! Mobile use dominates in JP due to the fast diffusion of 3G and adjusted devices! SoftBank holds exclusive right on iPhone 3G’s marketing: since 2007 SoftBank has recorded enormous increase in customers.

**Conclusions**
- Spread of 3G differs! Technological progress and cultural differences determine mobile life!
- Further reason for high popularity of data services in JP: it is NOT considered polite to talk by phone in public space (in contrast to Germany or Italy)!
Goldmedia-Report “Mobile Life 2012”

Content

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3G penetration will exceed 60% in 2012 in Germany!

Data service revenue* in DE 2002-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Data Service Revenue (in billion Euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>1.6</td>
</tr>
<tr>
<td>2008</td>
<td>2.3</td>
</tr>
<tr>
<td>2009</td>
<td>3.2</td>
</tr>
<tr>
<td>2010</td>
<td>4.8</td>
</tr>
<tr>
<td>2011</td>
<td>5.4</td>
</tr>
<tr>
<td>2012</td>
<td>5.7</td>
</tr>
</tbody>
</table>

...in billion Euros in Germany,

* Retail revenues from data services on wireless communication networks (including data access and content, without SMS, MMS) as billed by the mobile service operator. Interconnection revenues are not included in this segment.

3G penetration in Germany

...in % of mobile subscribers

<table>
<thead>
<tr>
<th>Year</th>
<th>3G Penetration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>3%</td>
</tr>
<tr>
<td>2006</td>
<td>8%</td>
</tr>
<tr>
<td>2007</td>
<td>11%</td>
</tr>
<tr>
<td>2008</td>
<td>15%</td>
</tr>
<tr>
<td>2009</td>
<td>23%</td>
</tr>
<tr>
<td>2010</td>
<td>39%</td>
</tr>
<tr>
<td>2011</td>
<td>50%</td>
</tr>
<tr>
<td>2012</td>
<td>61%</td>
</tr>
</tbody>
</table>

Conclusions

- 3G penetration will reach more than 60% of the German subscribers by 2012!
- Data service revenue should increase to almost 6bn Euro by 2012!
- Declining costs will make 3G attractive for the mass-market and push services related to mobile internet.
7. Forecasts
Mobile advertising still in its infancy in Germany!

**Mobile net advertising revenue* in DE**

<table>
<thead>
<tr>
<th>Year</th>
<th>Mobile net advertising revenue in million Euros</th>
<th>Annual growth in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>64</td>
<td>51%</td>
</tr>
<tr>
<td>2008</td>
<td>97</td>
<td>45%</td>
</tr>
<tr>
<td>2009</td>
<td>140</td>
<td>28%</td>
</tr>
<tr>
<td>2010</td>
<td>180</td>
<td>28%</td>
</tr>
<tr>
<td>2011</td>
<td>231</td>
<td>28%</td>
</tr>
<tr>
<td>2012</td>
<td>295</td>
<td>28%</td>
</tr>
</tbody>
</table>

(* including affiliate marketing, mobile search advt., in-game advert., direct marketing, display advert.)

**Conclusions**

- New 3G technology enables delivery of richer contents such as mobile TV, video and games.
- But: there is a limit to how many additional charges, subscriptions, fees, etc. users are willing to pay!

- **Sponsored or advertising-funded contents will become more and more accepted!**
- In Germany ~300m Euros mobile net advertising revenue expected by 2012!

- Challenges: business models and revenue share, type, length and frequency of ads, consumer attitudes
7. Forecasts
M-entertainment revenue grow to ~750m Euros by 2012!

**Results**
- German mobile entertainment market will grow by ~500m Euros by 2012
- Mobile net advertising will make up the largest part of revenues, followed by mobile video, games and music!

**Conclusions**
- By 2012: Substantial growth to ~750m Euros in m-entertainment revenue expected.

**M-entertainment revenue in DE in million Euros***

<table>
<thead>
<tr>
<th>Year</th>
<th>Mobile Advertising (net)</th>
<th>Mobile Video</th>
<th>Mobile Games</th>
<th>Mobile Music (downloads &amp; ringtones)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>64</td>
<td>57</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>2008</td>
<td>97</td>
<td>60</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>2009</td>
<td>140</td>
<td>53</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>2010</td>
<td>180</td>
<td>85</td>
<td>118</td>
<td>118</td>
</tr>
<tr>
<td>2011</td>
<td>231</td>
<td>96</td>
<td>142</td>
<td>142</td>
</tr>
<tr>
<td>2012</td>
<td>295</td>
<td>105</td>
<td>161</td>
<td>161</td>
</tr>
</tbody>
</table>

*including mobile music, games, video, net advertising revenues*

Source: Goldmedia 2008

German mobile entertainment market will grow by ~500m Euros by 2012.
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Content

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   5.1 Mobile Entertainment
   5.2 Mobile Internet
   5.3 Mobile Advertising
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Mobile phones with human qualities
Japanese could talk with their handsets soon! Phone Braver, a Softbank Mobile development, is able to communicate with its owner and react with facial expressions. In addition, arms and legs can be attached. The device possesses enough artificial intelligence to be able to have simple conversations and to learn its owner’s habits.

Source: www.focus.de/digital/handy/japan_aid_263164.html

Mobile phone with laser projectors and DLP-chips:
Different players such as 3M, Texas Instruments or Microvision have developed compact mini projectors for high resolution screenings. The projector could be integrated or be connected to the mobile device.

Source: www.computerwoche.de/nachrichtenarchiv/1851864

“Perfumed” mobiles:
The companies Isi und Convisual developed a patent-registered “perfumy mobile” which is able to receive odours via SMS. The handset could – for example – send SMS greetings for mother’s day with the smell of flowers.

Source: www.inside-handy.de/news/11777.html
8. Outlook & Theses

1. A life without mobile handsets is no longer imaginable for under 30s!

2. Spread of users and target groups: People 40+ prefer linear media and use their mobile mostly for traditional services such as voice telephony. People under 20 years who have grown up with digital media, use the entire range of services and applications of mobile devices.

3. The demographic change will lead to a high usage of mobile phones by elder people. Devices should be adjusted for these users who will account for the majority within the next decades! To reach the today’s generation 50+ there must be offered adjusted handsets & services, too.

4. Mobile devices are the Nº 1 tool for organising and structuring the entire interpersonal private and business communication. Their importance will increase even more.

5. Being “always on” and using mobile devices at any time and place will become more and more normal. Many users do not know that the switch-off button can give access to autonomy and freedom.
8. Outlook & Theses

6. The internet makes entertainment and information available at any time and any place! Mobile internet will make mobile phones more and more indispensable!

7. The way to consume music has changed radically. Nowadays everyone have access to all ever produced music.

8. Due to lifestyle changes (higher mobility, flexibility) mobile phones meet the demand for mobile entertainment. There is no device which is able to adjust to new usage situations and periods better than mobile phones.

9. The mobile phone increasingly replace functions of other devices. It will become people`s most important constant companion. Mobile phones are the showpieces for convergence (one device incl. telephone, camera, MP3-player, calender, internet access, etc).

10. The consumer benefits from more and more attractive data pricing: Mobile Internet becomes a mass market in Germany.
Strategies for E-Merging Media..

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