Mobile Handset Population in Finland 2005-2009
Department of Communications and Networking
5.5.2010
Agenda

- Data collection
- Mobile handsets vs. data terminals
- Top mobile handset models in Finland
- Concentration of mobile handset population
- Penetration of handset features
- Mobile handsets by
  - Manufacturer
  - Operating system
  - Input method
Data Collection

- Data collected using mobile operators’ reporting systems in 2005-2009
  - Ticket (CDR) and subscriber information systems of Finnish GSM/UMTS operators
  - Data collected in September/October 2005–2009
- Feature information from public sources and market research company GfK

- About 80-99% of Finnish mobile terminals included annually
  - Participating operators: TeliaSonera, Elisa, DNA
    - 2005-2007: DNA, Elisa (+Kolumbus), Sonera,
    - 2008-2009: DNA, Elisa (+Saunalahti +Kolumbus), Sonera (+TeleFinland),
  - Comprehensive sample of ~ 4 – 6 millions

- Includes all mobile terminals observed at the operators’ network
  - Terminals of both postpaid and prepaid subscribers
  - Mobile handsets and data terminals, limited data on other terminal types
  - Some error due to
    - Mobile subscriber churn during the observation period
    - Slight differences in operator-specific data sets
    - Unidentified terminals and missing feature-data of handset models
  - No data on Apple iPhone obtained from the exclusive distributor Sonera
# Mobile handsets vs. data terminals

<table>
<thead>
<tr>
<th>Terminal type</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile handsets</td>
<td>99.4%</td>
<td>98.7%</td>
<td>98.2%</td>
<td>95.0%</td>
<td>92.2%</td>
</tr>
<tr>
<td>Data terminals (data cards, USB modems, embedded data modules)</td>
<td>0.6%</td>
<td>1.3%</td>
<td>1.8%</td>
<td>5.0%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

- Share of data terminals continues to grow
  - Rather consistent with the growth of mobile broadband subscriptions in Finland*

- Other remarks
  - Other device types (e.g. desktop phones) excluded due to incomplete data

Top mobile handset models in Finland

- Data capable phones becoming more popular
  - Unlike 2008, packet data feature in top 3

- Features of top 15:
  - Packet data in 11 devices
  - WCDMA (3G) capability in 5 devices
  - Symbian OS in 4 devices

- However, smartphones (e.g., Symbian) not in top ranks of the list
  - Low-end covered with smaller number of models, i.e., high-end more fragmented

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**Top 15 handset models in Finland (Q3/2009)**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Model name</th>
<th>Share of all handsets</th>
<th>Change from 2008</th>
<th>Packet data*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nokia 2760</td>
<td>4.7%</td>
<td>↑</td>
<td>GPRS/EDGE</td>
</tr>
<tr>
<td>2</td>
<td>Nokia 3120 Classic</td>
<td>4.1%</td>
<td>↑</td>
<td>WCDMA</td>
</tr>
<tr>
<td>3</td>
<td>Nokia 1100</td>
<td>3.9%</td>
<td>↓</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Nokia 2600 Classic</td>
<td>2.5%</td>
<td>↑</td>
<td>GPRS/EDGE</td>
</tr>
<tr>
<td>5</td>
<td>Nokia 3310</td>
<td>2.4%</td>
<td>↓</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Nokia 3110 Classic</td>
<td>2.4%</td>
<td>↑</td>
<td>GPRS/EDGE</td>
</tr>
<tr>
<td>7</td>
<td>Nokia 2610</td>
<td>2.4%</td>
<td>↓</td>
<td>GPRS</td>
</tr>
<tr>
<td>8</td>
<td>Nokia 1600</td>
<td>2.3%</td>
<td>↓</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Nokia 6300</td>
<td>2.1%</td>
<td>↑</td>
<td>GPRS/EDGE</td>
</tr>
<tr>
<td>10</td>
<td>Nokia E51</td>
<td>2.0%</td>
<td>↑</td>
<td>WCDMA</td>
</tr>
<tr>
<td>11</td>
<td>Nokia N95 / N95 8GB</td>
<td>1.9%</td>
<td>↓</td>
<td>WCDMA</td>
</tr>
<tr>
<td>12</td>
<td>Nokia 2310</td>
<td>1.8%</td>
<td>↓</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>Nokia E90 Communicator</td>
<td>1.6%</td>
<td>⇨</td>
<td>WCDMA</td>
</tr>
<tr>
<td>14</td>
<td>Nokia 6060</td>
<td>1.6%</td>
<td>↓</td>
<td>GPRS</td>
</tr>
<tr>
<td>15</td>
<td>Nokia N73 / N73 Music Edition</td>
<td>1.5%</td>
<td>↓</td>
<td>WCDMA</td>
</tr>
</tbody>
</table>

* All WCDMA marked devices have GPRS/EDGE/WCDMA capability
Concentration of handset population

- Fragmentation of handset population increasing
  - Top 50 in 2009: 66%
    - 2008: 70%
  - Large number of models with marginal shares

- Remark:
  - Share of top 10 handsets unchanged from 2008
Features providing higher data transmission speeds continue to spread fast

- For example:
  - **EDGE** 53% → 65%
  - **WCDMA** 25% → 32%
  - **WCDMA 900** 1% → 7%
  - **HSDPA** 8% → 15%
  - **WLAN** with slower pace

- Also **GPS** has gained >10% penetration
  - Still not part of a typical handset
Penetration of handset features (2/2)

- Some features close to saturation (>80%)
  - GPRS
  - Color display
  - Java

- HTML capable browser in more than 1/3 of devices
  - Penetration of WAP/XHTML-MP capable handsets closer to GPRS and Java penetrations

- Bluetooth continues to substitute Infrared

Penetration of handset features in Finland 2005-2009 (2)

N = 4-6 Millions

Upper and lower error margins presented with ±
Mobile handsets by manufacturer

- About 89% of devices manufactured by Nokia
  - First non-Nokia handset ranked 60th
  - Nokia’s position has not changed notably during the past years

- Share of Samsung and Others continues to grow
  - Largest manufacturer in Others is LG (0.4%)
Mobile handsets by operating system

- **Share of Nokia Series 40 slowly increasing (~50%)**
  - 2008: 46%
  - Substitutes Nokia OS
  - Newer versions (5.-6. ed.) spreading quickly

- **Symbian share 22%**
  - 2008: 20%
  - Somewhat slower growth than Series 40
  - How will other smartphone OSs (e.g., MeeGo, Android,…) affect the share of Symbian in the future?

* Includes also S90 & UIQ

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![Bar chart showing mobile handsets by operating system from 2005 to 2009.](chart.png)

- Nokia Series 40
- Symbian
- Others
- Nokia OS

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Mobile handsets by input method

- Numeric keypad in 96% of handset population
  - About 92% of handsets have numeric keypad as the only input method

- Penetration of QWERTY (7%) and Touch screen (2%) increasing
  - Clear change since 2008
  - Discards of Nokia Communicators slowing the diffusion of QWERTY handsets
  - Different input method combinations available
    - Num. keypad and QWERTY, QWERTY and touch screen, QWERTY only, touch screen only, touch + num. keypad

<table>
<thead>
<tr>
<th>Input method</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeric keypad</td>
<td>98%</td>
<td>99%</td>
<td>99%</td>
<td>98%</td>
<td>96%</td>
</tr>
<tr>
<td>QWERTY</td>
<td>3%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td>Touch screen</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.3%</td>
<td>2%</td>
</tr>
</tbody>
</table>
Conclusions

• Typical handset manufactured by Nokia (89%) and has a numeric keypad (96%)
  – However, also other input methods (QWERTY & Touch screen) penetrating increasingly
  – Most popular mobile phones starting to have packet data functionality

• Nokia Series 40 (50%) the largest development platform, share of Symbian (22%) growing slowly

• What will happen in 2010?
  – How fast will QWERTY and Touch screen diffuse to the device population?
  – Penetration of emerging OS alternatives?
Further information

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• MoMI/MoMI2 project:
  – http://www.netlab.tkk.fi/tutkimus/momi/