The Swedish Work Environment Authority
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Noise application tool

Magnus Moström and Stefan Nygård
Noise

A smartphone application by Swedish Work Environment Authority

There is a need to estimate the sound pressure level in different situations
Main reason for the app development / Targeted audience

→ Branding

→ Encourage working environment
→ Reach "new" audience
→ Awareness about noise
Noise - iOS version

- Release date: February 2011
- Downloads: 319 000+
- Developing costs: ≈ 28 000 €
Noise - Android version

• Release date: February 2012
• Downloads: 115 000+
• Developing costs: ≈ 20 000 €
### Android events

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Total Event Occurrences</th>
<th>Event Occurrences (Daily Avg)</th>
<th>Unique Event Users (Daily Avg)</th>
<th>Events per Session (Daily Avg)</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise measuring</td>
<td>1,015,074</td>
<td>852.29</td>
<td>441.26</td>
<td>0.94</td>
<td>filter</td>
</tr>
<tr>
<td>Contact us phone number dialled</td>
<td>2,002</td>
<td>1.68</td>
<td>1.42</td>
<td>0.00</td>
<td>filter</td>
</tr>
<tr>
<td>User shared result on Facebook</td>
<td>195</td>
<td>0.16</td>
<td>0.14</td>
<td>0.00</td>
<td>filter</td>
</tr>
</tbody>
</table>

### iOS events

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Total Event Occurrences</th>
<th>Event Occurrences (Daily Avg)</th>
<th>Unique Event Users (Daily Avg)</th>
<th>Events per Session (Daily Avg)</th>
<th>Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise measuring</td>
<td>1,840,748</td>
<td>1,100.27</td>
<td>703.05</td>
<td>0.99</td>
<td>filter</td>
</tr>
<tr>
<td>Contact us phone number dialled</td>
<td>11,389</td>
<td>6.81</td>
<td>4.05</td>
<td>0.01</td>
<td>filter</td>
</tr>
<tr>
<td>User shared result on Facebook</td>
<td>1,782</td>
<td>1.07</td>
<td>0.98</td>
<td>0.00</td>
<td>filter</td>
</tr>
</tbody>
</table>
One minute of fame

- 75 000+ downloads the first 2 weeks (iOS)
- Nominated for the Swedish Design Price 2011
- Used in TV during Skiing World Championships
- One of the first Swedish Authorities in App Store
- "App of today" MacWorld magazine
Dissemination strategy
I often use the Noise App during inspections. It’s a fantastic tool, even if it’s not 100% reliable. If we got a high noise level I refer to occupational health services.
Specification - Estimation of sound pressure level – End user
The logarithmic decibel scale

1  90 dB

2  93 dB

10  100 dB

100  110 dB
A-weighted sound pressure level

- Limited to 40 – 95 dB
- Depends on cell phone (brand and model)
Frequency response - comparison

200 Hz – 5000 Hz

IEC 61672-1, class 2 sound level meter
Development time

- Development of main code: ≈ 4 months

- Calibration of each model: ≈ 2 - 8 hours
Main challenges to the app development

• Calibration of different cell phones (Brand and model)
  – Frequency range
  – Dynamic range

• Update of cell phone operating system

• Approval from App Store

• Users demanding more
Other challenges

- Review-time by Apple when update (7 - 10 days)
- Answer all comments in App Store and Google Play
Illuminance and contrast meter for iOS
Ljus for iOS

- Release date: January 2012
- Downloads: 13 000+
- Developing costs: ≈ 50 000 €
Web app – Sanction-charges-avoider, www.avgiftsundvikaren.se
A part of a major campaign

“First, we launched sanction charges. Now we help you to avoid them.”

• Developing costs: ≈ 20 000 €
• Used 6500 times the first 2 months.
Upcoming web app – Systematic Work Environment Quiz
Support

• Is there an interest to cooperate in order to further develop / maintain the noise app?
  – EU-OSHA
  – Commission
  – Others?

• Is there an interest to translate the app to other languages than Swedish and English?

• Other suggestions?
THANK YOU !
QUESTIONS?

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Stefan Nygård