See no... Hear no... Track no...
Risks, Benefits & Ethics on the Intelligent Campus

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Seems harmless...

- Detects infra-red radiation from warm body
- May also use ultrasound to detect motion
What happened next…

“finally takes … action on the problem of under-provision of library spaces”
[The Tab 4/5/17]

“outrage from students” “staff apologise” “tracking”
[Glasgow Times 17/5/17]"
# What went wrong?

## Intrusiveness scale

<table>
<thead>
<tr>
<th>Level</th>
<th>Detects</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Presence</td>
<td>GDPR: not personal data</td>
</tr>
<tr>
<td></td>
<td>Is space occupied?</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Counting</td>
<td>Draft ePrivacy Regulation: “statistical counting”</td>
</tr>
<tr>
<td></td>
<td>How many? How fast?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Identifying</td>
<td>GDPR: personal data</td>
</tr>
<tr>
<td></td>
<td>Sensing/affecting an individual</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Recording</td>
<td>ECtHR: Peck (CCTV); PG and JH (voiceprints)</td>
</tr>
<tr>
<td></td>
<td>For possible future processing</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Analysing</td>
<td>ICO: “real step-change in the way law-abiding people are monitored as they go about their daily lives”</td>
</tr>
<tr>
<td></td>
<td>Continuous processing</td>
<td></td>
</tr>
</tbody>
</table>
## What went wrong?

### Intelligent campus senses

<table>
<thead>
<tr>
<th>Level</th>
<th>Detects</th>
<th>Video</th>
<th>Audio</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Presence</td>
<td>Is space occupied?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Counting</td>
<td>How many? How fast?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Identifying</td>
<td>Sensing/affecting an individual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Recording</td>
<td>For possible future processing</td>
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<tr>
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<td>Analysing</td>
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<td></td>
</tr>
</tbody>
</table>
### What went wrong?

#### Intrusiveness examples

<table>
<thead>
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<th>Detects</th>
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<th>Audio</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Presence</td>
<td>Is space occupied?</td>
<td>Motion sensor</td>
<td>Presence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sound level</td>
<td>Wifi/Bluetooth activity</td>
</tr>
<tr>
<td>1</td>
<td>Counting</td>
<td>How many? How fast?</td>
<td></td>
<td>Queue monitors</td>
</tr>
<tr>
<td>2</td>
<td>Identifying</td>
<td>Sensing/affecting an individual</td>
<td>Monitored CCTV</td>
<td>Location-aware app</td>
</tr>
<tr>
<td>3</td>
<td>Recording</td>
<td>For possible future processing</td>
<td>Recorded CCTV</td>
<td>Logfiles, access cards</td>
</tr>
<tr>
<td>4</td>
<td>Analysing</td>
<td>Continuous processing</td>
<td>Number Plate/Face recognition</td>
<td>Relationship mapping</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Voice recognition, trigger words</td>
<td></td>
</tr>
</tbody>
</table>

- **PIR on Hotdesk**
- **PIR on my desk**
How to avoid this...

Identify (perceived) risks to individuals

• What are they?
• How big are they?
• How can we manage them?
• Are they (residual) now acceptable?
• Use DPIA to identify/assess/manage/explain
  • Processes from ICO, UCISA, ...
  • All involving consultation...
  • Sources of risk/mitigation from Jisc
Why does it matter?

If students/staff feel “spying” or “creepy”, they may...

• Avoid monitored spaces (reducing utilisation 🙁)
• Avoid monitored services (use inefficient/insecure shadow IT 😞)
• Swap monitored cards etc. (damaging primary, security, purpose)
• Avoid challenging discussions (we’re required to promote free speech)
• Etc.
• Intelligent campus gets increasingly blind/stupid
• Perceived surveillance also harms wellbeing
How to really avoid this

DPIA as a continuing “what-if” tool

• Think together about
  • Sensor creep – including malicious insiders and outsiders
    • E.g. PIR moved to personal office; baby monitor hacked...
  • Purpose creep – reuse of data/sensors for new purposes
    • E.g. Linking datasets; swipecard logs to map personal relationships
  • Space creep – sense leakage in space & time
    • Public & private spaces entangled on campus, not all sensors respect walls
    • E.g. corridor sensors cover bedrooms too; wifi logs from counselling service
How to *really* avoid this

Embed DPIA in wider (ethical) process

- Choose the right purpose/benefits
  - Consult before you decide, not afterwards
- Choose the right data
  - You almost certainly have more than you need
- Plan for errors
  - Both in inputs and outputs
- Agree what you will (and won’t) do
  - Keep checking
- Give Authority: Take Responsibility
Intelligent (digital) campus

Even more...

- Data
  - From digital infrastructure we control
- Reasons to process it
  - Could skip the “contact app” entirely
- Risk of “techno-stress”
  - On students/staff already suffering wellbeing issues
  - Digital panopticon?
- Need to explain/discuss/agree
References

• (draft) Toolkit – comments very welcome
  • https://community.jisc.ac.uk/blogs/regulatory-developments/document/consultation-assessing-impact-re-using-campus-data

• Peer-reviewed paper
  • Cormack AN, “See No... Hear No... Track No... Ethics and the Intelligent Campus”, (2019) 3:1 JIRPP
  • https://jirpp.winchesteruniversitypress.org/articles/abstract/10.21039/irpandp.v3i1.59/

• Blog
  • https://community.jisc.ac.uk/blogs/regulatory-developments/tags/Intelligent-Campus