Open technology for air quality information in your neighbourhood

Wiebke Herding, ON:SUBJECT

Air Pollution and Citizen Science | Milano, 14-15 Nov 2018

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 688363

hackAIR in figures

- Collective Awareness Platform for Sustainability & Social Innovation (H2020, 2016-2018)
- 6 partners: academia, technology, air quality
- 2700 users across Europe
  750 sensors in operation

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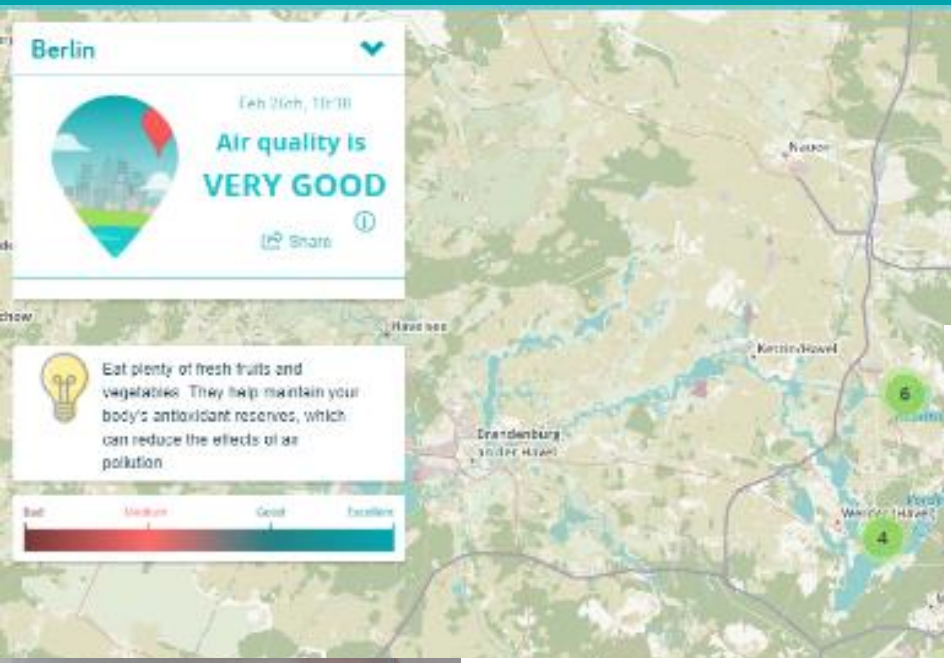
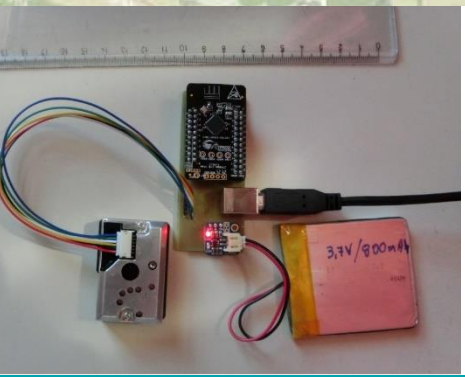
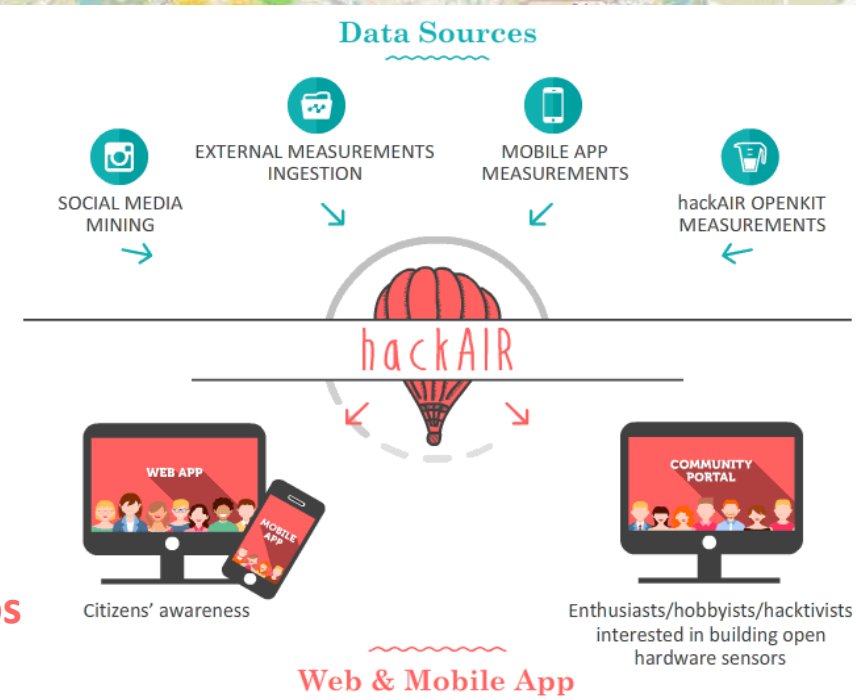
Technology innovation





- Air quality data from multiple sources
- Low cost sensors
- Photo analysis
- Continuous fusion maps
- Social media mining



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Bergens Tidende

MÅLERE: Stein-Erik Dahle og Kyrre Sørensen tråkker til for å være med på folkedugnaden for å måle luftkvaliteten i

Anne Jo Lexander

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COLLECTIVE AWARENESS FOR AIR QUALITY

Can we demonstrate impact & behaviour change?

Experimental group (44)

Survey 1 → Workshop, June 2018

Brussels, Belgium → Survey 2

Control group (40)

Survey 1 → Survey 2

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Who participates?

- **Young(er) adults**:
  79,3% between 21 and 40
- **Males**: 58,6%
- **Educated**: 81% have a master degree or higher
- **Urban**:
  69% living in the city center

This profile is **not uncommon**

There is an "*inherent bias in the socio-economic make up of citizen science (…)*". "[Participants] *will be predominantly **male, well educated** and from **higher brackets of the income scale**, which gives them both the time capital to participate in the activity and the financial resources for specialist equipment and/or participation in field work.*"

Haklay, 2013

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Motivations

1. Concerns regarding **health** (83%)
   > **environment** (67%)

2. Interest in **topic** (92%)
   > **technology** (59%)
   > contribution to **science** (50%)

3. **Social aspect** comes last in the motivations (29%)

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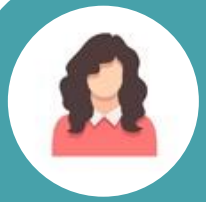
COLLECTIVE AWARENESS FOR AIR QUALITY

Three profiles



Helen
The Health concerned

"I want to know what is the level of air pollution me and my children are exposed to, what are the effect on health and what I can do to limit the risks. "

★★

Tom
The Tech-enthusiast

"I want to learn about the technology and how it can help with the problem of air pollution."

★★★

Simon
The Science devotee

"The most important thing is that the data is available for scientists to have a better idea of the problem and the best ways to reduce the exposure to air pollution."

★

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Measuring behaviour change

The **beliefs** of the participants regarding air quality

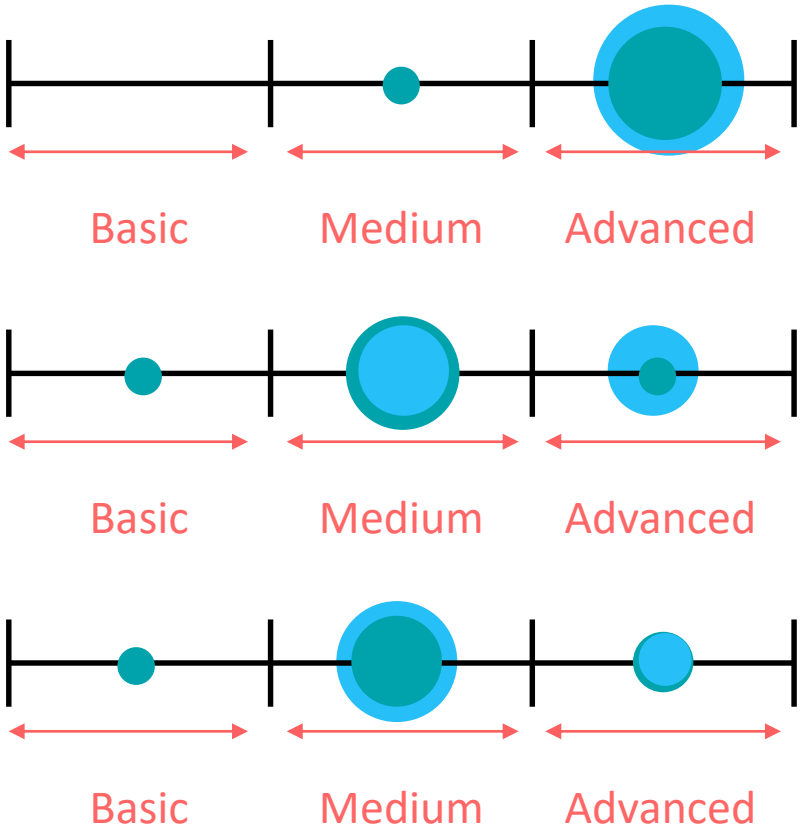
- Self-efficacy
- Problem-awareness
- Citizen voice

The **knowledge** of the participants regarding air quality

- Theoretical knowledge
- Practice knowledge

The **behaviours** participants were undertaking regarding air quality

- Prevention behaviours
- Protection behaviour



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Some lessons

- ❑ Embrace your super-users
- ❑ Feedback loops, feedback loops, feedback loops
- ❑ Give back

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