

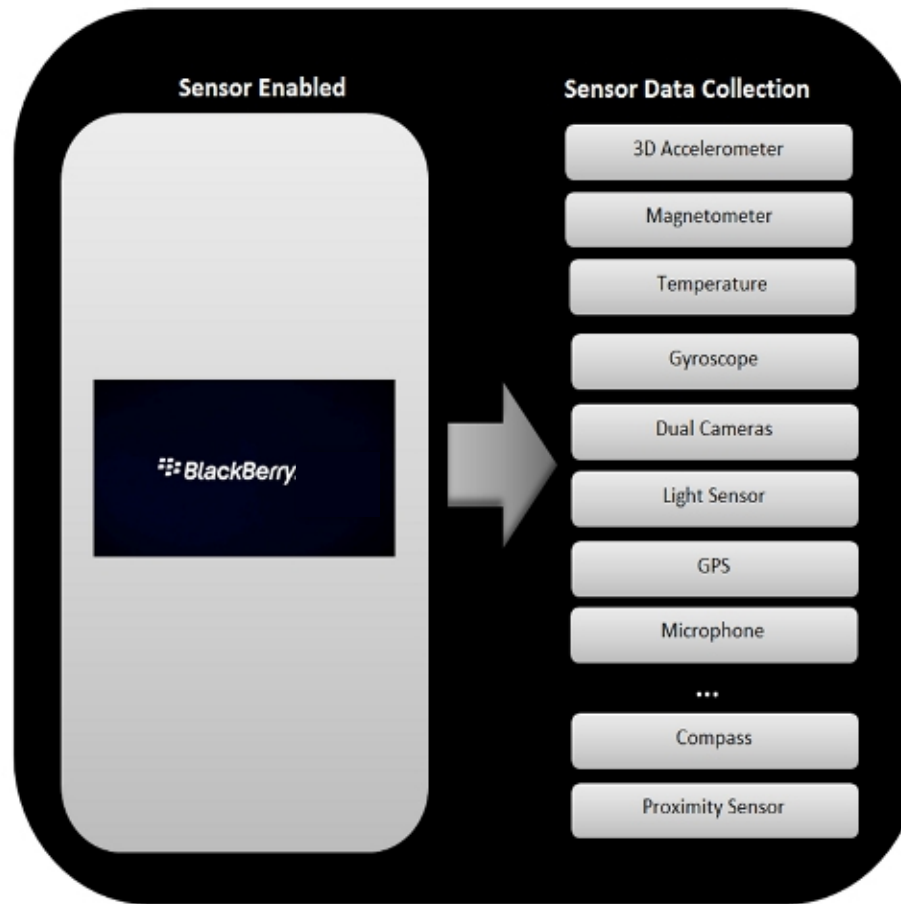
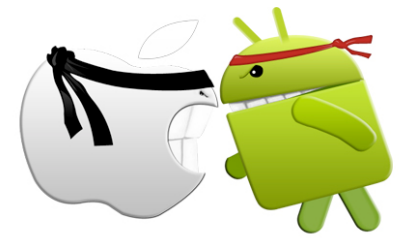
PARTICIPATORY SENSING

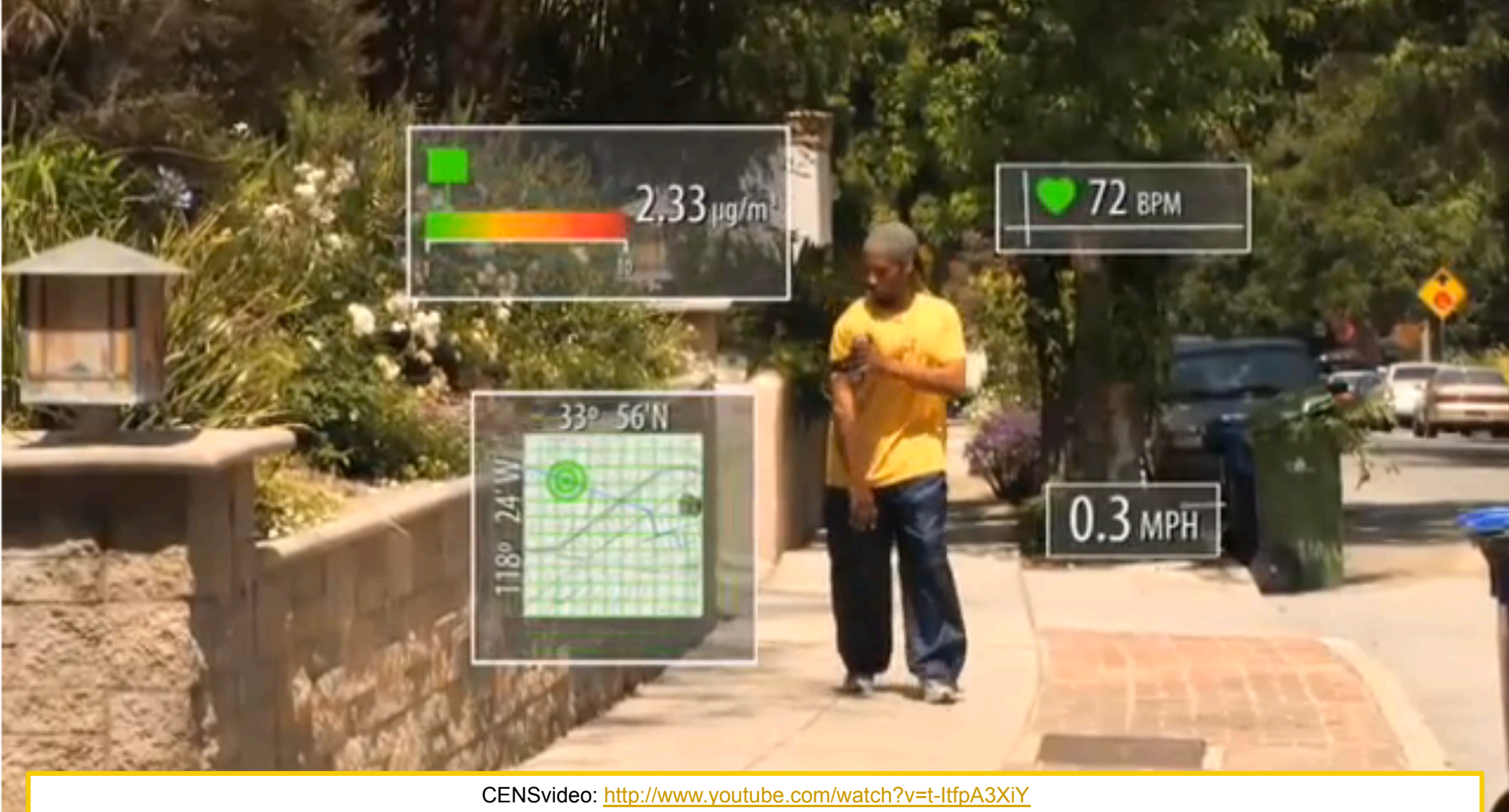
Lessons from citizen science and game design research

LIZZY BLEUMERS

@ (UN)PLUGGING DATA IN SMART CITY-REGIONS 14/11/2016

A PLETHORA OF SENSED DATA





CENSvideo: <http://www.youtube.com/watch?v=t-ltfpA3XiY>

PARTICIPATORY SENSING (PS)

“Participatory Sensing is an approach to data collection and interpretation in which individuals, acting alone or in groups, use their personal mobile devices and web services to systematically explore interesting aspects of their worlds ranging from health to culture.” (<http://www.mobilizingcs.org/about/participatory-sensing>)

APPLICATIONS



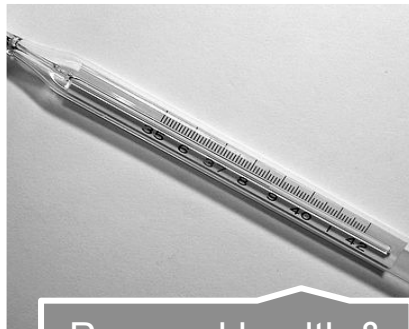
Environmental
impact & exposure



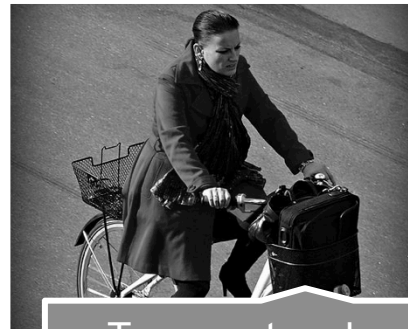
Science &
education



Communities &
grassroots



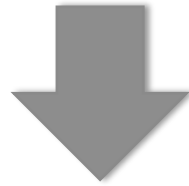
Personal health &
wellbeing



Transport and
mobility

PARTICIPATION PATTERNS

**Public
coordination**



**Personal use and
reflection**



**Collective design
and investigation**



KEY ISSUES

Reliability and trust

Perceived data accuracy depends both on reliability of the system, those who use it and the trust that is placed in both.

Privacy tradeoffs

Privacy has to be guaranteed and balanced with other concerns (such as accountability, attribution, data objectives)

Engagement

Inclusive and sustained citizen participation requires acknowledging skills and interests of those involved

LESSONS FROM CITIZEN SCIENCE

- **Recognize that motivation is dynamic**
- **Highlight data use**
- **Tie into local groups and interests**
- **Support community formation and networked synergy**
- **Enable matching between stakeholders and tasks**
- **Adopt a symmetric governance approach**
- **Don't forget about enjoyment**

LESSONS FROM GAME DESIGN RESEARCH

To what extent and how can mobile and pervasive game design and research inform the design of participatory sensing campaigns in order to

- Appeal to a **broader** audience?
- **Deepen** the engagement of volunteers?

DATA COLLECTION AND GAME-PLAY

SENSING AS...

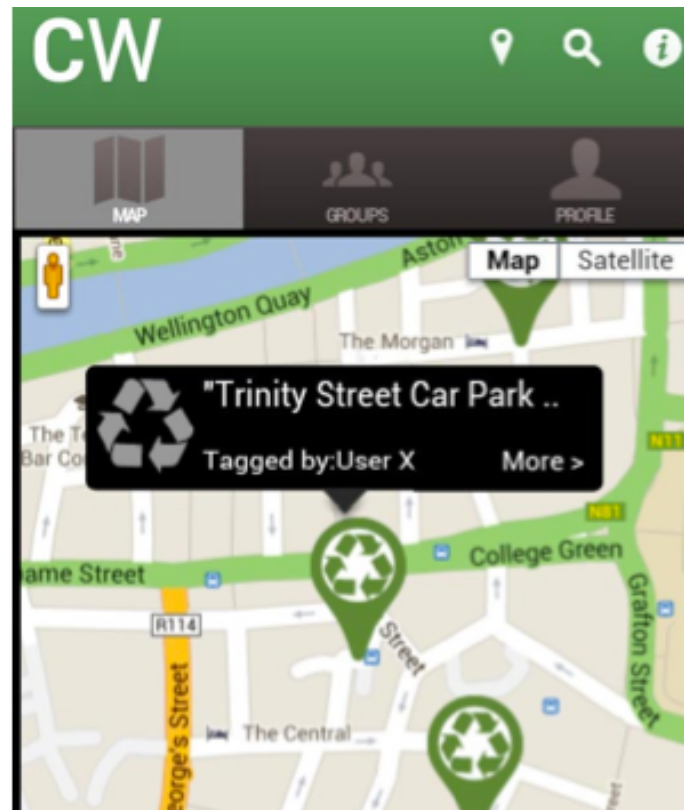


DATA COLLECTION AND GAME-PLAY

SENSING AS...

Citywatch

achievement



DATA COLLECTION AND GAME-PLAY

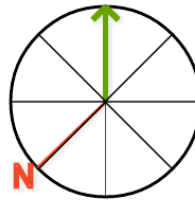
SENSING AS...

Budburst Mobile

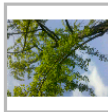
Floracache Medium level

Current Direction:

SE (134°)



achievement



Ginko

+ Distance to plant: 348ft

+ Direction to plant: SE (135°)

Not close enough.

Make Observation

DATA COLLECTION AND GAME-PLAY

SENSING AS...

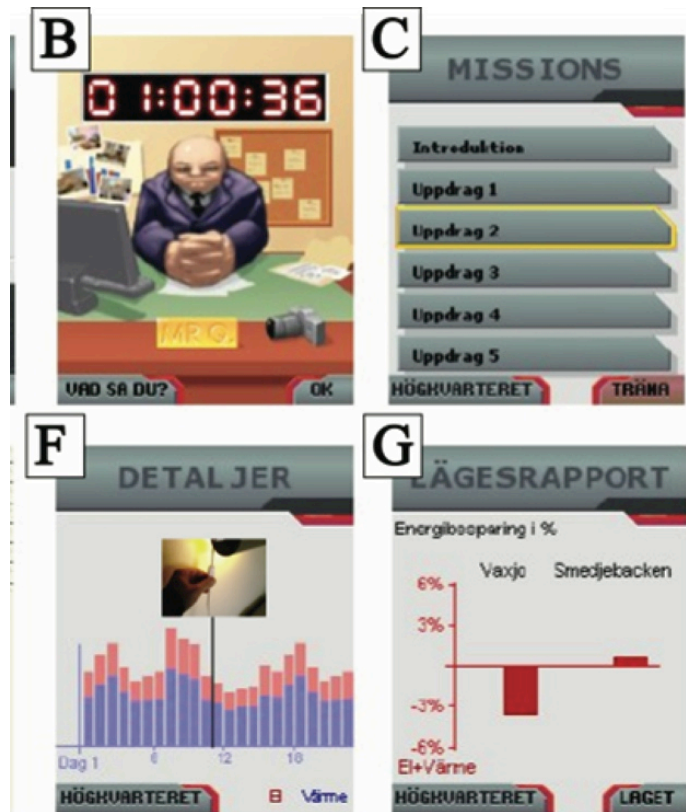
parallel to
gameplay

means for
customization

achievement

game controller
or resource

Power Agent



DATA COLLECTION AND GAME-PLAY

SENSING AS...

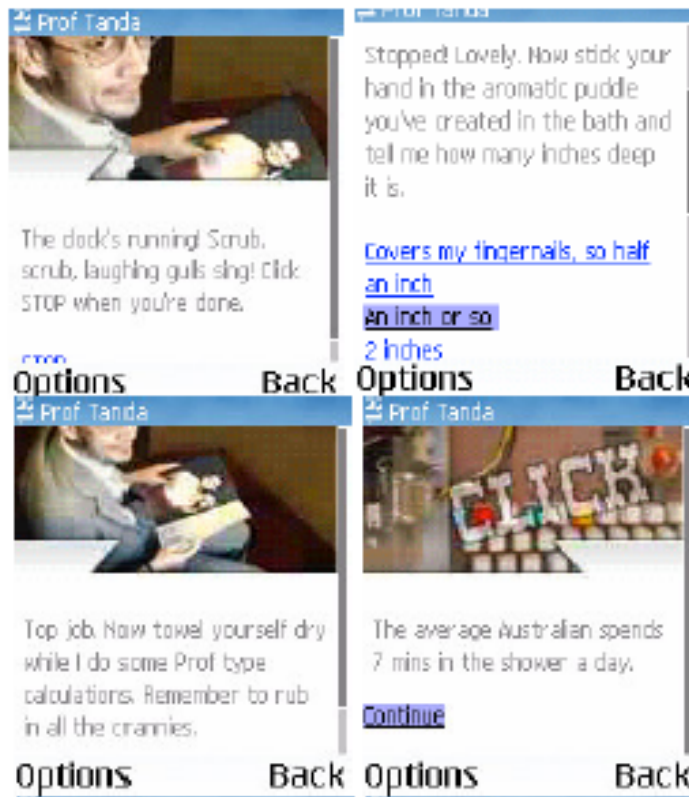
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Professor Tanda



DATA COLLECTION AND GAME-PLAY

SENSING AS...

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Wind Runners



This is the introductory level with an easy solution. The player needs to get the ball to the goal area in order to finish the level.



The player needs to reach the ball; however, it is on a pillar. The player can knock the ball off by using their air reservoir tank.

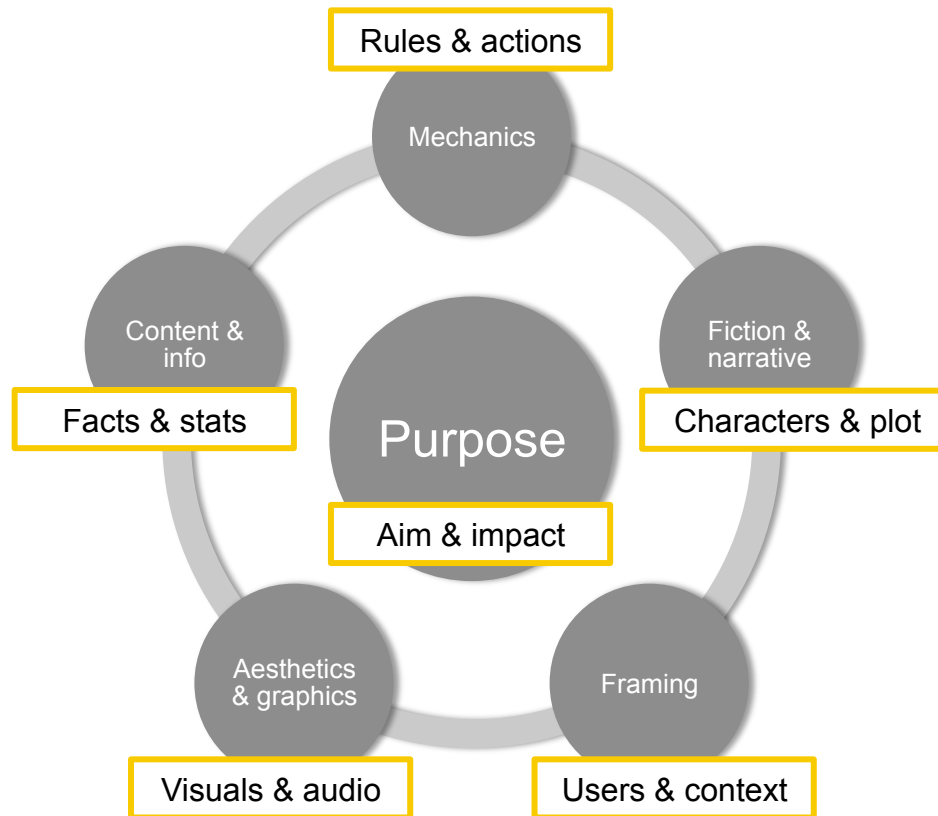




CHOICES, CHOICES...

Start with clearly defining the purpose that is central to your initiative!

BALANCING ACT



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THANK YOU

Battery dead - Game over



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