

# INCLUSIVE CITIES: A CROWDSOURCING APPROACH

Elena Simperl

The city of the future  
Cardiff, December 2018

The background of the slide features a dark, grayscale image of a city skyline at night. Overlaid on this image is a network diagram consisting of several circular nodes connected by thin, light-colored lines. One node in the upper left contains a cloud icon, and another in the lower right contains a bus icon. The overall aesthetic is technological and urban.

# DATA IS TRANSFORMING CITIES

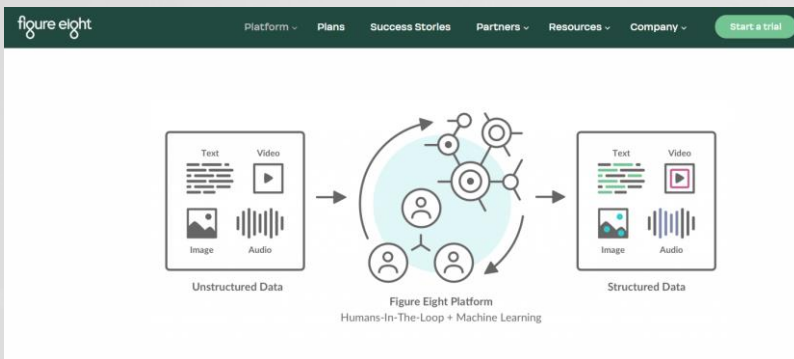
Cities have access to more data than ever to improve urban services, create efficiencies and reduce their environmental footprint

Machine learning and AI can help optimise traffic, support future planning and improve fuel efficiencies



A SMART CITY IS  
INCLUSIVE

Citizen-, rather than  
technology-centric  
Participatory  
Using data responsibly



# SOLUTIONS

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**POWERFUL FEATURES**  
Collect, Manage, Analyze

**Data collection**  
Gather submissions from anyone, anytime, anywhere

**Multiple sources**  
Receive reports from many sources, SMS, email, and Twitter

**SMS submissions**  
Collect posts via SMS when you connect with an SMS gateway or Twilio

**Custom surveys**  
Bring together multiple data types with custom forms

**iOS & Android**  
Submit reports and view maps from our mobile apps

## POTHOLES AND BIG DATA: CROWDSOURCING OUR WAY TO BETTER GOVERNMENT



Image: get directly down/Flickr



Citizen sensing



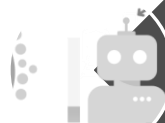
Open \*



Participatory governance



Crowdsourcing



Human in the loop

# THE QROWD PROJECT

3 years project funded through  
Horizon 2020

8 partners from 5 European  
countries, led by the University  
of Southampton

Smart city solutions

Combining crowd and  
computational intelligence

Piloted in transportation with

A medium-sized smart city

A leading navigation and traffic  
management service provider



[qrowd-project.eu](http://qrowd-project.eu)

[@QrowdProject](https://twitter.com/QrowdProject)



# OUR APPROACH

Mix of open innovation methods to co-design pilots and encourage stakeholder participation

Value-centric approach to platform design: personal data empowerment, open source, building upon existing standards

Sustainable urban auditing through online and mobile crowdsourcing

Human-in-the-loop (HIL) architecture to improve the accuracy of predictions

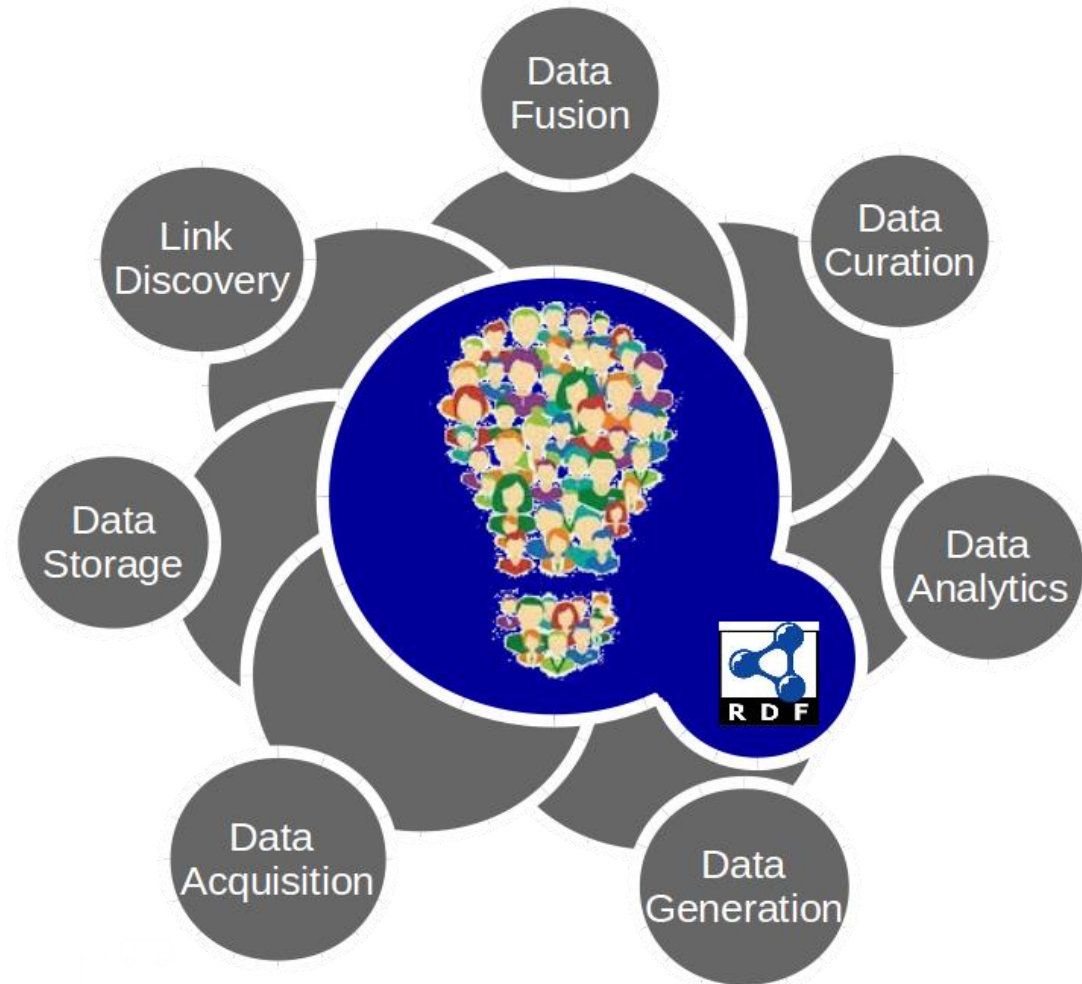
# MORE THAN JUST TECHNOLOGY

**Supports deployment of  
human-machine workflows  
throughout**

**Interfaces to multiple  
crowdsourcing services**

**Complemented by methodology  
and guidelines**

**Data protection by design**



INNOVATION STRATEGY LEADING YOUR TEAM OPERATIONS TECHNOLOGY MARKETING GLOBAL [SUBSCRIBE](#)

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# The Collective Intelligence Genome

Magazine: Spring 2019 • Research Feature • April 11, 2019 • Reading Time: 20 min  
Thomas W. Malone, Robert Laubacher and Chrysanthos Dellarocas

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A user's guide to the building blocks of collective intelligence: By recombining CI "genes" according to the work required

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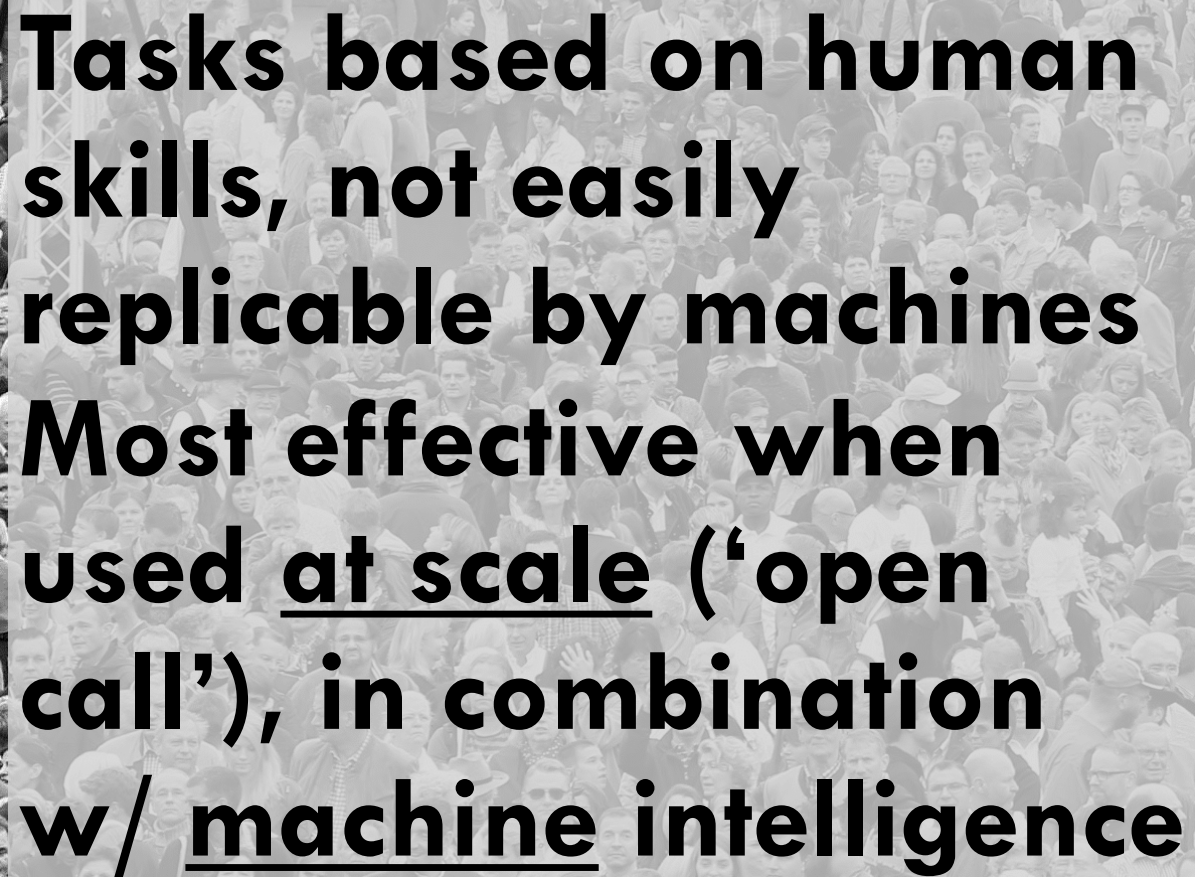
## THE METHODOLOGY



- **What** - Goal
- **Who** - Participants
- **How** - Implementation
- **Why** - Incentives



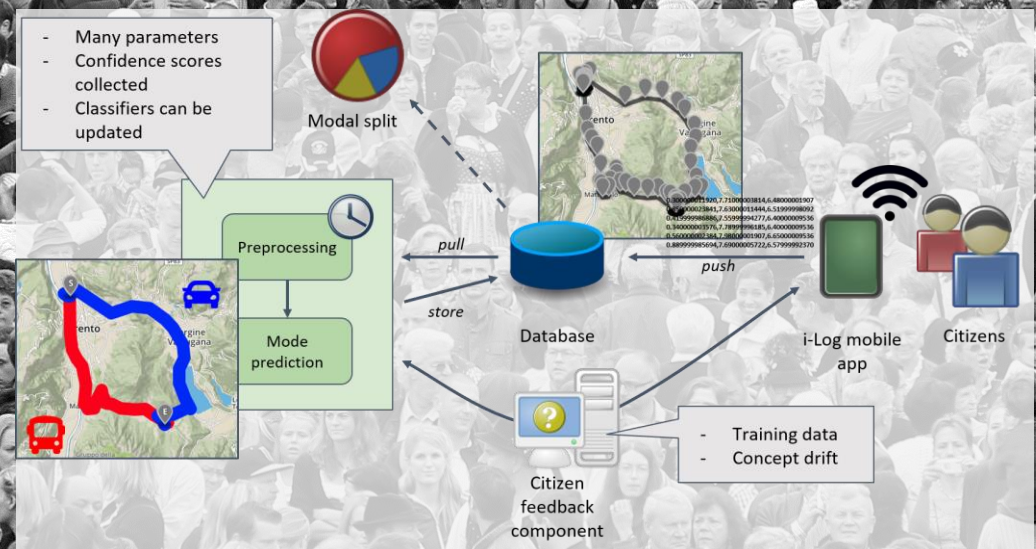
# What to crowdsource?



**Tasks based on human  
skills, not easily  
replicable by machines  
Most effective when  
used at scale ('open  
call'), in combination  
w/ machine intelligence**

# Example

# Predicting modal split





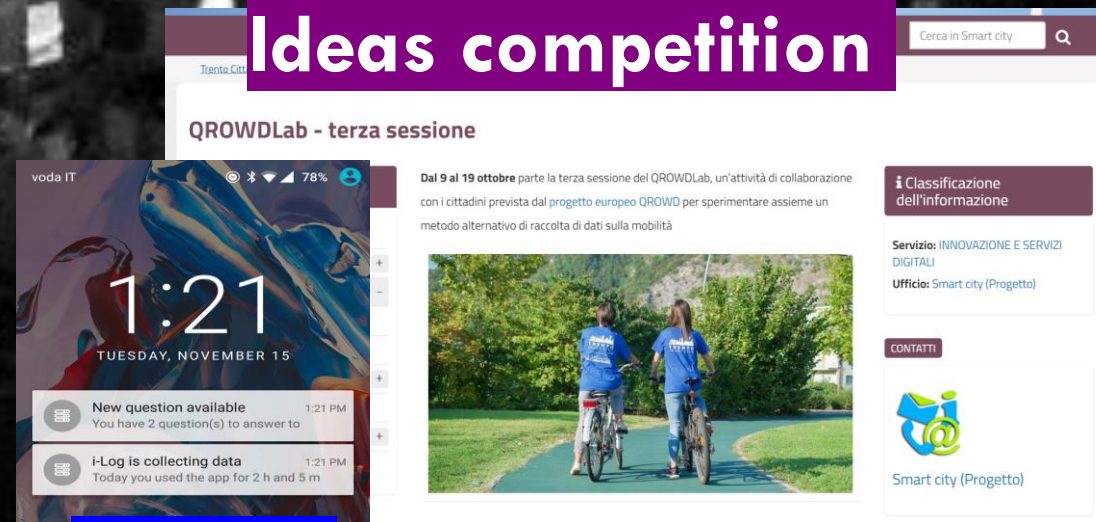
# Who is the crowd?

# Use the right crowd for the right task

## Paid crowdsourcing



## Ideas competition



## Citizen sensing



# How to crowdsource?

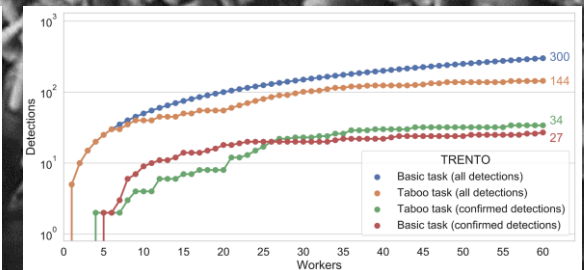
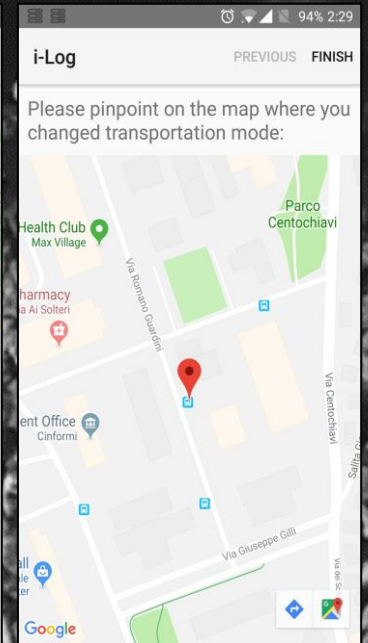
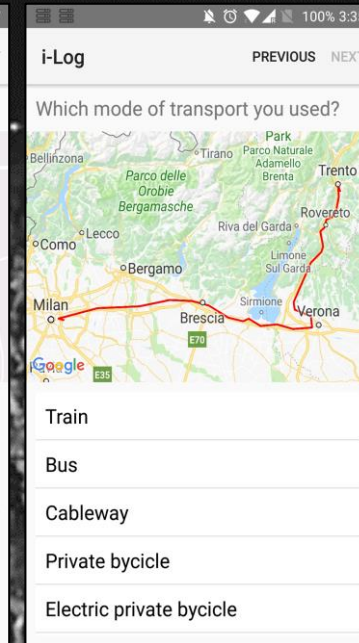
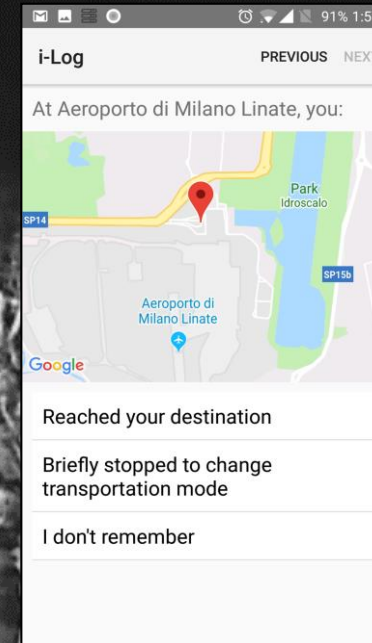
Implicit vs. explicit participation

Onsite vs. remotely

Instructions and interfaces

Quality assurance and behavioural analysis

Time constraints



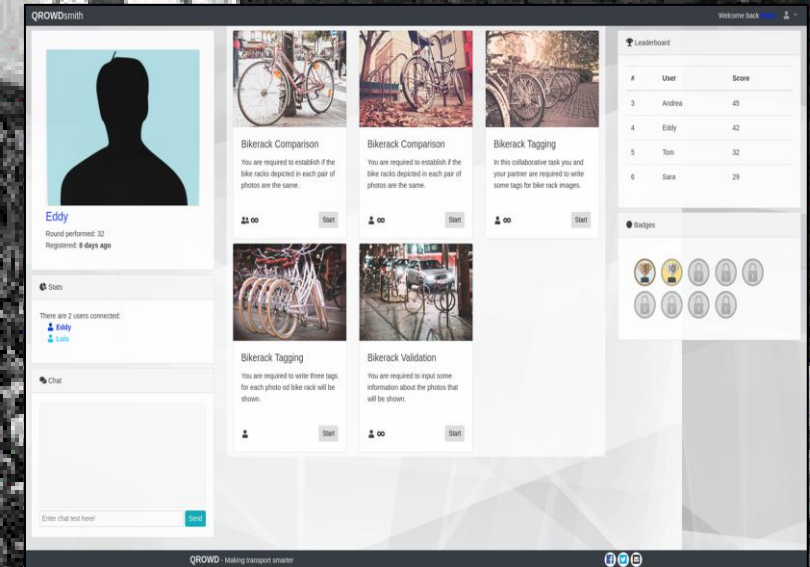


# Why should anyone participate?

People do things for love,  
money or glory

Love and glory keep costs  
down

Money and glory deliver  
faster





# CONCLUSIONS

Explore the **what, who, how, why** methodology to solve problems through participatory methods.

To use AI and ML cities will need not just data, but labelled data, created through crowdsourcing.

Use the full range of approaches and techniques to apply crowdsourcing at scale.