





Action plan City of Antwerp

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Action 1: Image recognition for waste reporting



Description



Image recognition for waste reporting: what is it?

- Existing Antwerp City App for notifications from citizens
- New feature: upload a photo
- Al recognizes location, time and type of waste

Improved processes:

- Facilitate the process for citizens to make a notification
- Reduce response time between notification and clean up
- Enhance separate waste collection





Development AI tool	✓
Database creation, model training (13 types of waste)	✓
Tested with small project group (70 pers)	✓
Testing with all Antwerp Staff (9.000 pers)	Ongoing
Further database increase (from 13 to 30 types of waste)	Prepare in 2022
Public testing	End of 2022



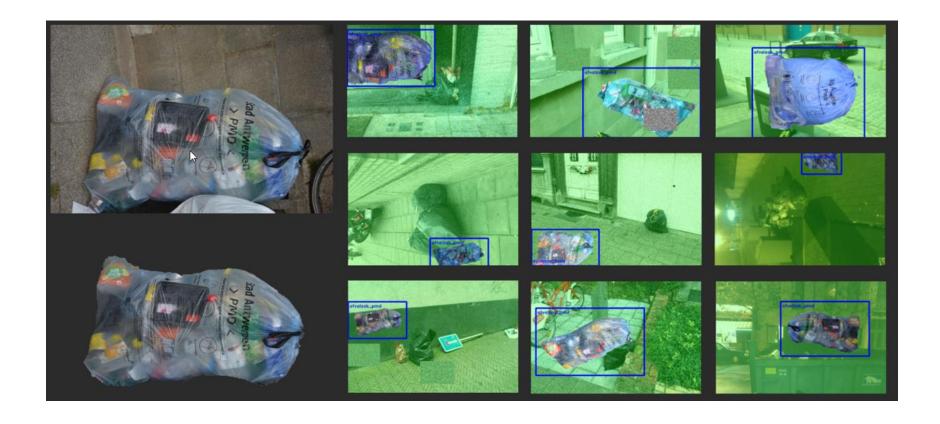


Database creation and model training

- 2017-2019: 45.866 notifications
- 75% of notifications is about 6 types of waste
 - Electronic devices
 - Shopping bag with waste
 - Furniture
 - Large bag with waste
 - Small hazardous waste
 - Construction waste
- Manual work, data augmentation (change side, colors, lights in existing pictures), advanced data labeling, manipulate background of pictures









Resources needed



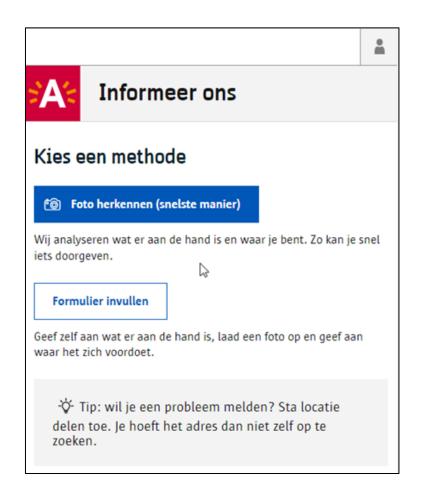
City council → Multi-Annual Plan 50K EUR for software development

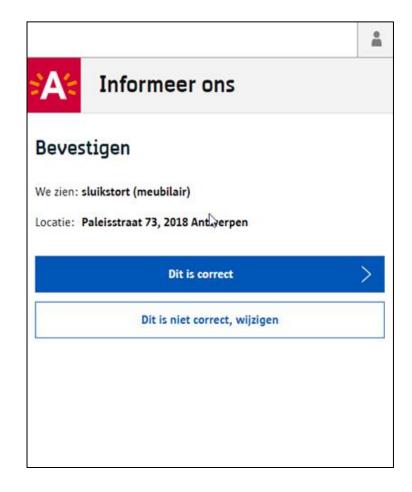
Real total cost is higher (internal technical staff costs etc)



Evidence of success









Action 1: Image recognition for waste reporting

Evidence of success



13 types of waste in Al database = 64% recognition



Lessons learned



Main focus was on Al development

Time and capacity for **testing** was underestimated

For future projects with an AI, more time and capacity will be provided for testing





Action 2: Info app for UWC (underground waste containers)



Description



Info app for UWC: what is it?

- Existing Antwerp City App for UWC-accounts of citizens
- Several new features:
 - Consult personal balance for waste deposits
 - Make deposit to top up balance
 - Find nearest available UWC
 - Personal historic overview of deposits in UWC
 - Block/activate UWC-card
 - Improved communication about UWC

Improved process:

- Enhanced user-friendliness, faster access to features
- More self-service and thus more efficient use of employees



Action 2: Info app for UWC (underground waste containers)



Analysis of needed software development	✓
Implementation in www.antwerpen.be	Semi √
- Make online deposit to top up balance	✓
- Consult personal balance for waste deposits	✓
- Activate UWC-card	✓
- Find nearest available UWC	Issues
- Personal historic overview of deposits in UWC	End of 2022
- Block UWC-card	Q3 2022
Develop API between app and www.antwerpen.be	2023 onwards



Action 2: Info app for UWC (underground waste containers)



Delays

- For new online customer zones: decided to work with specialised UX-analyst instead of regular analysts
- This created a delay of several months
- However: online environment will be more user-friendly from the start

Issue with displaying nearest UWC

- First a map needs to be developed by another business unit of the City of Antwerp
- Only then this feature can be implemented



Resources needed



City council → Multi-Annual Plan 50K EUR for software development

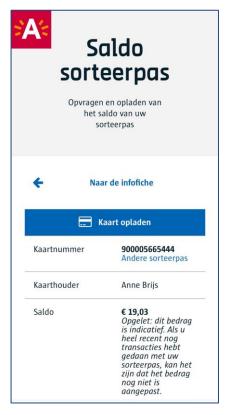
Real total cost is higher (internal technical staff costs etc)



Evidence of success



Thousands of users now top up their balance online









Action 2: Info app for UWC (underground waste containers)

Lessons learned



It is better to **invest in the process**Even if that means a delay

In order to **maximise the results**









Thank you for your attention

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www.interregeurope.eu/winpol