



WINPOL
Interreg Europe



European Union
European Regional
Development Fund

Action plan City of Antwerp

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Systems and Policies

WINPOL Final Conference

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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
- AI 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



Implementation

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



Implementation

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



Implementation



Action 1: Image recognition for waste reporting

Resources needed


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

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




Action 1: Image recognition for waste reporting

Evidence of success



Informeer ons


Kies een methode


 **Foto herkennen (snelste manier)**

Wij analyseren wat er aan de hand is en waar je bent. Zo kan je snel iets doorgeven.

Formulier invullen

Geef zelf aan wat er aan de hand is, laad een foto op en geef aan waar het zich voordoet.

 **Tip:** wil je een probleem melden? Sta locatie delen toe. Je hoeft het adres dan niet zelf op te zoeken.



Informeer ons

Bevestigen

We zien: **sluikstort (meubilair)**

Locatie: **Paleisstraat 73, 2018 Antwerpen**

Dit is correct >

Dit is niet correct, wijzigen



Action 1: Image recognition for waste reporting

Evidence of success

13 types of waste in AI database = 64% recognition



Action 1: Image recognition for waste reporting

Lessons learned

Main focus was on **AI development**

Time and capacity for **testing** was underestimated

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



Action 1: Image recognition for waste reporting

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)

Implementation

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)

Implementation

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



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

Resources needed

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

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



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

Evidence of success

Thousands of users now top up their balance online

A

Saldo sorteerpas

Opvragen en opladen van het saldo van uw sorteerpas

[← Naar de infofiche](#)

Kaart opladen

Kaartnummer **900005665444**
[Andere sorteerpas](#)

Kaarthouder **Anne Brijs**

Saldo **€ 19,03**
Opgelet: dit bedrag is indicatief. Als u heel recent nog transacties hebt gedaan met uw sorteerpas, kan het zijn dat het bedrag nog niet is aangepast.

Sorteerpas opladen

Gegevens

Kaartnummer
900005665444

Kaarthouder
Anne Brijs

Huidig saldo
€ 19,03

Opladen

Laad hier uw pas meteen **online** op:

Op te laden bedrag

€

Minimum € 0,10

Opladen

[Annuleren](#)

Of via een **bankoverschrijving**:

Rekeningnummer
BE53 0961 1004 0053

Gestructureerde mededeling

1 — 2 — 3 — 4

Overzicht

Sorteerpas opladen online voor 900005665444

Sorteerpas opladen online voor 900005665444

(1 stuk) € 5,00
BTW € 0,00

[Lees de algemene voorwaarden +](#) van dit product.

[Sorteerpas opladen](#)

Overzicht

Sorteerpas opladen online voor 900005665444	€ 5,00
Subtotaal	€ 5,00



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**



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



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Thank you for your attention

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www.interregeurope.eu/winpol