

## **TAKANOME** - Littering Investigation and Analysis

## Cities Without Litter Through Artificial Intelligence

'TAKANOME' is an artificial intelligence-based program that maps litter and measures the severity thereof using visual recognition technology. We aim to contribute to creating litter-free cities by evaluating anti-litter efforts through our cutting-edge research and providing other consulting services related to urban development.

## Issues in Beautification to Date and TAKANOME

To date, it has been common for cleanup actions to be sporadic and unorganized, and consequently, it has not been for the most part possible to accurately measure the effects of cleanup actions. With the municipal/regional edition Pirika, a social network which facilitates the visualization of the cleanup process, it is now possible for users to (i) share measured results of cleanup actions, (ii) to participate and cleanup actions (regardless of time and location) and (iii) (for companies and other organizations), utilize PIRIKA as a platform for publicizing cleanup actions. The foregoing qualities of Pirika support and promote cleanup actions within municipalities.

Additionally, by analyzing the type/volume of litter by region and season, Pirika contributes to effective cleanup and beautification projects.



Reduce Costs of Beautification, Cleanup and Awareness Projects

**Evaluate Litter Patrol Routes** 

Research to Prevent Littering

Evaluate Locations for Trash Cans and Smoking Areas

Sync with Regional Cleanup Efforts

Compare Against Other Regions

## Investigation Process Using TAKANOME

1. Develop Investigation Plan



Depending on the purpose of the research, design research area and frequency

2. Capture Street Surfaces



Capture sidewalks in research area with special app

3. Analyze Video



Use visual recognition technology to analyze types and quantity of litter

4. Check Quality/ Calibrate



Final checks by trained staff

5. Prepare Report



Use heat maps to better understand results

Map Data @ 2016 Google, ZENRIN





Pirika Inc.