One wireless and autonomous M2M sensor is installed in the bins lid. The sensor measures the container filling level using ultrasonic technology, and periodically transmits all captured information to the SAP HANA Cloud Platform (HCP), where the data is processed and presented as usable information.

A waste collection based on smart data processing significantly reduces costs, emissions, road wear, vehicle wear, and noise pollution and work hours.
Story

Summary

The Public Space Manager for City Government needs a solution to monitor, control and carried out an efficient waste collection of bins placed around the 'Hundred Neighborhoods Porteños' in City of Buenos Aires, Argentina.

Storyline

The Public Space Manager is interested to know any factors that could be impact in waste collection about garbage bins. The Control Manager needs to be notified as soon as possible if there are problems with the bins where the waste are deposited.

The Public Space Manager needs to be able to detect if an abnormal event happen, for example, an overfull bins, or if it is necessary perform a partial or unscheduled collections, or if there is a sudden change in temperature – high fire risk – or simply if a container has been moved out of the assigned area or if it was stolen.

In conclusion we need to be alerted to such situations, if it is possible, in real time, so we can take action quickly and minimize the service impact.
Persona

John H. Roderick
Public Space Manager

“...I like to monitor all essential variables of goods available existing and I have the responsibility to planning the development of a Smart Green City, clean and eco-friendly.”

About Roderick

• 48, married.
• 5 years’ experience as Public Space Manager, being the person who makes the decisions about garbage collection.
• I have to keep the balance between improving the resources efficiency and good services.
• I believe that the technology can help to change the world.
• I work with the Technicians, Admins, Contractors, Operators, Managers, Executives and the Head of Government.

Responsibilities

• Plan resource allocation and utilization of bins.
• Monitor capacity of resources being used.
• Analyze cost to value maximization of bins and service utilization.
• Devise a checklist for aligning the annual work plan objectives
• Ensure regulatory compliance

Main Goals

• Assess bins availability and upkeep appropriately.
• Perform periodic assessments on lifespan of bins and monitor status.
• Ensure responsibilities by staff and suppliers if they are completed satisfactorily.

Needs

• I need to know the current status of the bins utilization.
• I need to monitor bins which are currently exceeding anticipated lifespan.
• I need to ability to record time instantly since I am away from my desk most of the time.
• I need to be able to know if there are abnormal events relative to bins or the garbage collectors in real time.

Pain Points

• The useful lifespan of bins are not controlled and are overused.
• Human resources are not assigned correctly.
• No metrics on utilization rate of the bins
• Status of the bins utilization or condition is unknown or outdated.

Competencies

Casual User
Proactive
Work in Team
Global Focus
Innovative

Power User
Reactive
Lone Fighter
Local Focus
Conservative
Point of View (PoV)

Roderick, the Public Space Manager...

... NEED TO have a quick overview of the bins installed in the streets SO THAT he can know the behavior and create more efficient routes.

... NEED TO A WAY TO detect if there are abnormal events SO THAT he can execute the appropriate procedure by informing in a timely manner to the stakeholders who has responsibility of it.

... NEED TO know the fill level of bins, SO THAT he can plan the services based on the metrics captured automatically.
### UX Journey

**Duration of the Journey:** 90 min

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>Call ‘Good Morning’ about notifications with stakeholders.</th>
<th>Pick up the alert list.</th>
<th>Call to supplier to know if the bins are ready in the street.</th>
<th>Scheduling routes. Complete spreadsheet routes.</th>
<th>Checking the weather channel for any alerts Applies the changes</th>
<th>Send a spreadsheet by email with “optimized routes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINDSET</td>
<td>How we can automate the notification?</td>
<td>Status of the bins utilization or condition is unknown or outdated.</td>
<td>I don’t know how many bins are available?</td>
<td>A weather alert in process! We will need to re-plan all routes. Rework!</td>
<td>I have to wait for the weather report The weather alert is over. I have to apply the changes</td>
<td>I imagine a system in the cloud with bins and sensors that report their current status autonomously and automatically.</td>
</tr>
<tr>
<td>FEELING</td>
<td>😞</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOUCH POINTS</td>
<td>• notebook (pencil) • phone • Workstations • Task List</td>
<td>• reports (paper and digital) • Laptop (emails) • Tablet</td>
<td>• SAP CRM for Contacts • Control Board</td>
<td>• spreadsheet, email • Printers</td>
<td>• internet browser, papers • Maintenance Schedule report</td>
<td>• spreadsheet, email • Global Datacenter</td>
</tr>
</tbody>
</table>
Mockup & Prototype

Link to Build.me Prototype:
https://standard.build.me/api/projects/42b39727fe1b119e0cd40aaa/prototype/snapshot/latest/index.html

Wireframes

Low-Fidelity

High-Fidelity