

Smart Guadalajara

Using Technology To Supporting Service Delivery

The Smart Guadalajara project has enabled Guadalajara City Council to introduce Smart city principles into service contracts. The project has improved services using use of Internet of Things (IoT) technology and integrating data on to a shared platform. The city is able to monitor, evaluate and improve both contractor performance and citizen experience. The first service to be transformed is the contract for street cleaning and urban waste collection.

Aim

The main purpose was to improve contract management and provide a better service to citizens. Integrating this data on a Smart city platform enables better management of the municipality's service delivery. In the future other services will be integrated on to this platform with the potential to demonstrate that interoperable data from one service area can impact on others, and vice versa.

Process

The digital transformation of the waste collection service has been implemented using two models - a technological model to implement an integrated and scalable architecture for present and future needs of the service, and a participation model, which centralises communication flow between citizens and the city.

1. Technology:

- A Smart city platform with a horizontal structure, which is reusable, scalable, open and aligned with the European FIWARE standard.
- Sensors in glass containers, paper containers and bins.
- Provision of TAG / RFID identification system in containers and bins.
- Activity sensors in sweepers and builders.

- GPS tracking equipment in collection vehicles and trolleys.
 - A container weighing system in collection vehicles.
 - Operator terminals in collection vehicles and street cleaning equipment.
- #### 2. Participation:
- In person: at the citizen service office.
 - Telephone: a free line phone.
 - Internet: website, social networks, App.

Success factors

A set of guiding principles were used to achieve the objectives:

- One of the pillars of Smart cities is the use of a platform that supports city services for citizens and allows services to be monitored and controlled. The purpose of the platform is to take advantage of the information from different stakeholders.
- Compliance by result where services are measured via quality indicators. The sum of the indicators and their compliance ratios generates a monthly percentage of compliance. This results in a monthly bonus or penalty that the city pays to the contractor.

Stakeholders

- Guadalajara City Council.
- Telefonica.
- Valoriza-Gesum.

Challenges & solutions

- Designing a flexible urban service provision system with bonuses and penalties.
- Application of different new technologies.
- Centralising service information to automate the calculation of indicators.
- Including the citizen as an active partner in the service.
- Qualitative research in the use of the service.
- Scalability allowing integration to the rest of the city's services.
- Key to success was working closely with the stakeholders e.g. the company and the city worked together to define 25 flexible indicators.
- Some of the scheduled daily tasks were inflexible and better suited to a traditional contract rather than a variable contract.

Achievements

The service provides an economic benefit to the city because payment is directly linked to delivery. It has led to an improvement in service delivery in the following ways:

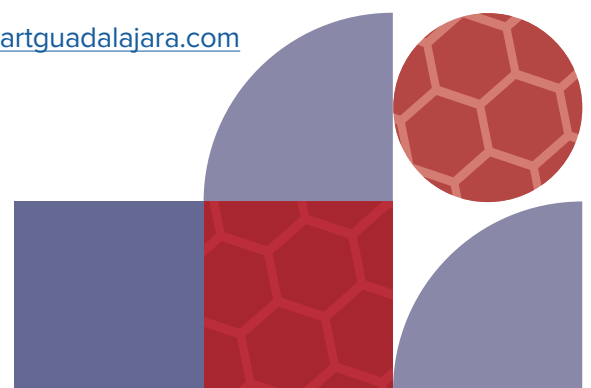
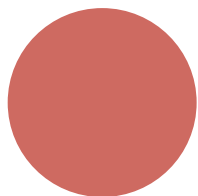
- Reducing response time to incidents of citizens using the Smart Guadalajara App: 30% - 60%.
- Decreasing fuel consumption through route optimisation: 3% - 15%.
- Improvement of storage and an automatically updated inventory: 3% - 18%.
- Reduction of the daily planning time of the different routes and tasks: 5% - 15%.
- Savings in maintenance costs: 5% - 18%.
- Reduction of non-productive/lost time: 30% - 60%.
- Detection and elimination of troublesome locations due to overflows: Up to 85%.

More information

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Further information on SmartImpact network visit:
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