

1 Task 1.1

🕒 **Question 1.** Identify the context of this project. Who are relevant stakeholders? What are their current needs? What could be their current problem? In your opinion, what benefits UWC 2.0 will be for each stakeholder?

✅ **Solution**

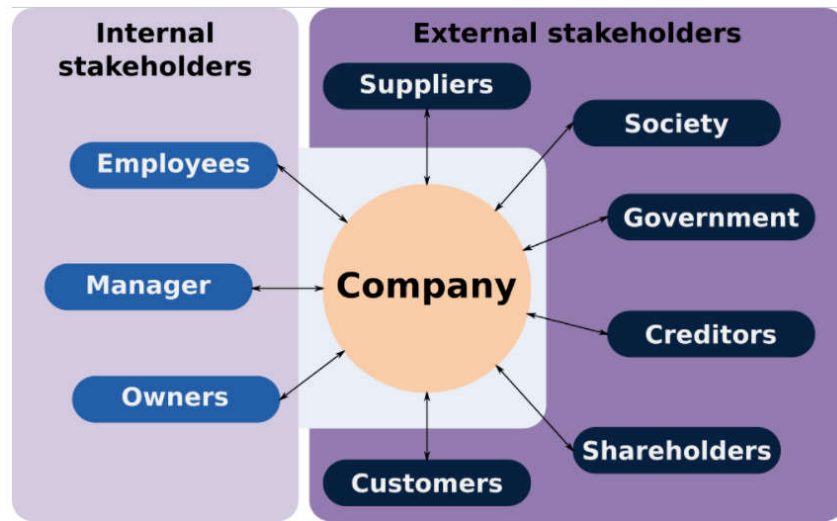
1.1 Context of this project - Background information



"In 2015, United Nations adopted the Sustainable Development Goals (SDGs) as a universal call for action to end poverty, protect the planet and ensure that by the end of 2030, every human can enjoy peace and prosperity."

With the goal of sustainable development, adherence to the SDGs regulations should be taken into consideration whenever launching any development or economic growth projects. However, given the situation in developing countries around the world, the treatment of waste in urban areas is an urgent problem because it violates SDGs 6 – clean water and sanitation and SDGs 11 – Sustainable cities and communities. As a result, governments and businesses in these countries are concentration their efforts on mitigating the harmful effects of industrialization on the city, society and the environment. With that in mind, we created the UWC 2.0 product to aid in urban waste management.

1.2 Relevant stakeholders



Stakeholders: are related parties that have effects on or be affected by the company in various aspects. Stakeholders can be divided into two categories: either internal stakeholders (individuals and parties that are parts of the organizations) or external stakeholders (not part of the organization but affected by the company).

In the context of developing UWC 2.0, the stakeholders can be determined as follow:

Internal stakeholders:

- **Organization X:** because they are the one who contracted to develop the UWC 2.0 software to aid urban management systems.
- **Service Provider Y:** because they will be the one who receive the UWC 2.0 software and deploy it on cities scope.
- **Back officers:** because they create calendars and plans for collectors and janitors.
- **Collectors:** because they are the ones who work with the janitors to collect waste.
- **Janitors:** because they directly collect waste.

External stakeholders:

- **Government:** because they are interested in proposing solutions to mitigate the impact that industrialization in metropolitan areas causes to the environment.
- **Society:** because the UWC 2.0 assists urban waste collection, which in turn affects the surrounding environment.

1.3 Stakeholders' current needs

For each stakeholder, their needs may be different.

- **Government:** need a way to balance development and economic growth while still protecting the environment and following SDGs. To be more specific, they need a better waste management method to stop unhandled trash from contaminating pure source of water and land areas.
- **Society:** need to live in unpolluted areas and information about the waste collection plans. In detail, urban citizens also need better waste management methods so that the surrounding environment is fresh and clean. Also, the need for waste collection plans is crucial because they can classify trash into different categories and hand them to the janitors on schedule.
- **Back officers:** also need a better waste management method so that they can easily plan which vehicles collectors will use, determine the specific routes for collectors, and keep track of the activity.
 1. Have an overview of janitors and collectors, their work calendar.
 2. Have an overview of vehicles and their technical details (weight, capacity; fuel consumptions, etc)
 3. Have an overview of all Major Collection Points and information about their capacity. Information should be updated from Major Collection Points every 15 minutes with the availability of at least 95 percent of their operating time.
 4. Assign vehicles to janitors and collectors.
 5. Assign janitors and collectors to Major Collection Points.
 6. Create a route for each collector. Assigned routed is optimized in term of fuel consumption and travel distance.
 7. Be able to send messages to collectors and janitors.
- **Collectors and janitors:** also need a better waste management: need to know which vehicle to use, which route to follow and when to gather waste to Major Collection Points.
 1. Have an overview of their work calendar.
 2. Have a detailed view of their task on a daily and weekly basis. All important information should be displayed in one view (without scrolling down).
 3. Be able to communicate with collectors, other janitors and back officers. The messages should be communicated in a real-time manner with delay less than 1 second.
 4. Check in / check out task every day.
 5. Be notified about the Major Collection Points if they are fully loaded.

⇒ All of the stakeholders are interested in a software that aid urban waste collection.

1.4 Stakeholders' possible current problems

Current problems:

- **Government:** They could not afford the cost of harming the environment with more development and economic growth projects because it would violate the regulations stated in SDGs.
- **Society:** Citizens can not tolerate living in polluted areas (waste everywhere - uncollected and unhandled) - this could be detrimental to their health and limit their living space.
- **Back officers:** They do not have a clear overview of vehicles and their technical details (weight, capacity, etc) and the calendar of collectors and janitors, so they can not efficiently plan. Moreover, they can not message the collectors and janitors, so if collectors and janitors act incorrectly during the job, they could not guide them the right way.
- **Collectors and Janitors:** For collectors and janitors, it would be difficult for them to use various software simultaneously, including calendar for work shifts, map to follow the correct route, etc. Also, if they face problems during the time doing tasks, they can not message the back officers for help. In some nations, the jobs of collectors and janitors are even more troublesome because of no software available so their information are not digitized. This could, in turn, reduces their productivity.



1.5 Our opinion on the benefits of UWC 2.0 for each stakeholder

For each stakeholder, they can receive different benefits from the software, but in common, a better waste management method.

- **Governments:** A better waste management method provides them the opportunities to focus on more development and economic growth while still adhere to the Sustainable Development Goals.
- **Society:** Citizens can live in a fresher and cleaner environment with no health risk and can be active in handing in domestic waste to the janitors to keep their house clean.
- **Back officers:** They can have better overview of vehicles and their technical details (weight, capacity, etc) to plan and assign tasks efficiently. This could not only reduce fuel consumption but also make their jobs become clear and straightforward. In addition, they will not have to spend too much time training for the collectors and janitors as before.
- **Collectors and Janitors:** They can enjoy a much less stressful task - to take care of multiple things simultaneously. Instead, the UWC 2.0 would provide them with everything they need (from calendar and working shifts, to map, to the ability the message the back officers to ask for help).

