# The Challenge

The company is a large construction company. It operates in the demolition industry. Work in the company is divided into demolition and preparation of ceilings and walls for pouring concrete. One of the main challenges is communication between workers working on a separate part of the building being demolished and workers shuttering the rest of the building. The material obtained during demolition is used for subsequent work and construction. The demand for various materials changes several times a day, affecting downtime and work delays. From 2 to 3 people work on demolition and up to 9 people on formwork. Introducing a tablet-type communicator with a system for earlier selection and entering information about the material needed would allow for faster preparation for the release of the material and would improve work management. An employee in demolition would enter the amount and type of recycled material into the system, and an employee in the formwork would see the amount and type of material and could choose from the list what he is interested in and place an order without having to leave his workstation.

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## Main Requirements

* Tracking of assets within the construction site and the construction itself,
* Acceleration of the performed service.

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## Other Requirements

N/A

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## Key Performance Indicators

N/A

**Industry Sector:**
Construction industry

**Challenge classification:**

Manual reusable material management system.

**Time for Project Completion:**

I am unable to estimate the time.

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## Other informations

Use manufacturing execution systems (MES) or enterprise resource planning (ERP) systems?

No

Number of machines to be connected:

2 tablet devices to deploy. The system and software must be easy and transparent to use.

# Research Phase

*Taking into account the challenge description, its requirements and its information, elaborate at least 5 questions that can lead your research for a solution.*

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## Research questions:

*Given the questions and the main requirements of the challenge previously listed:*

* *identify possible technologies using the Planet4 Taxonomy Explorer;*
* *identify and analyze the sources (papers, articles, etc.) of those technologies that best suit the challenge;*

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## Technologies identified in the taxonomy:

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## Sources of those technologies that best suit the challenge:

*In light of the discoveries made:*

* *report the answers for the questions above;*
* *compare 2-3 of the more common solutions identified in the sources (how would they change the approach to the solution? What are the possible benefits/issues in such a use of these technologies?);*
* *draw initial conclusions on which path you want to take in proposing a solution.*

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## Answers:

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## Comparison:

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## Conclusions:

# Proposed Solution

*Making use of the technologies identified after the analysis of the sources, describe a possible solution to the challenge. Also, do not forget the constraints (time, number of devices to produce/connect, etc.): the solution must be applicable to the real context of the company that commissioned the challenge.*

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## Solution Summary

*Brief description of the solution (1-2 paragraph + 1 image)*

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## Solution Description

*Describe the solution and its details*

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## Implementation Plan

*Describe the solution implementation plan considering among other things: gantt chart with milestones, high-level cost analysis, possible difficulties (at least 3 major issues or difficulties) and additional opportunities (at least 2 extra benefits).*