

PLAGIARISM DECLARATION

I, Kok Yao Zhang, A176818 (full  
name and surname and student number) hereby declare that this take home online assessment's  
answer is my own work.

I further declare that:

- Copying someone else's answer, or part of it, is wrong, and that submitting identical work to others constitutes a form of plagiarism.
- I have not allowed anyone to copy my work with the intention of passing it off as their own work.

Signature: 

Student number: A176818

Date: 14/7/2021

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## Issues

the site engineer decides that the plant is no longer needed.

In this case, he/she asks the clerk to cancel the request for hiring the plant

In 10% of the cases, the plant is sent back because the plant does not comply with the original specifications of the site engineer. In this case, the site engineer has to start the process all over again.

The approval of the invoice takes on average 5 days, oftentimes because site engineers are very busy and do not take the time to do their part of the approval.

### **a) Issue register**

Issue 1: Requests is often canceled for plant hiring

Priority: 2

Description: Site engineer canceled the request for plant hiring

Data and assumptions: 5000 plants is requested for the construction sites per year. In 10% of cases, Site engineer decides that the plant is no longer needed. The cancelled plant is usually no longer request by another site engineer that day due to the schedule and the time taken to initiate another hiring process. On average, the plant rental costs RM 200 per day.

Qualitative impact: Not applicable

Quantitative impact:  $5000 \times 0.1 \times 200 = \text{RM } 100000$  additional hiring expenses per year

Issue 2: Hiring process restarted

Priority: 1

Description: Site engineer restart the entire hiring process due to the plant does not comply with the original specifications.

Data and assumptions: 5000 plants is requested by MegahBina per year. In 10% of the cases, the plant is sent back because the plant does not comply with the original specifications of the site engineer. On average, the plant costs RM 400 per day and two days to be send in and send back. On average, The delivery fees of the plant cost RM 50 per unit.

Qualitative impact: These events disrupt the construction schedules and might create frustration and internal conflicts among staffs and workers.

Quantitative impact:  $0.1 \times 5000 \times 50 + 5000 \times 0.1 \times 200 \times 2 = \text{RM } 225000$  in additional hiring expenses per year

Issue 3: Approval of invoice takes too long and causes penalty fees.

Priority: 3

Description: Site engineer takes too long to approve the invoice and a penalty fees is given to the company.

Data and assumptions: 5000 plants is requested by MegahBina per year. Each plant is rented on average for 8 days at a rate of RM 200 per day. Each rental leads to one invoice. About 10% of invoices are paid late. On average, the penalty for late payment is 1% of the amount of the invoice.

Qualitative impact: Suppliers are angry and later unwilling to negotiate better deals and better plants for the company.

Quantitative impact:  $0.1 \times 5000 \times 8 \times 200 \times 0.01 = \text{RM } 8000$  in additional hiring expenses per year

#### **b) root cause analysis (why-why diagram or Fishbone)**

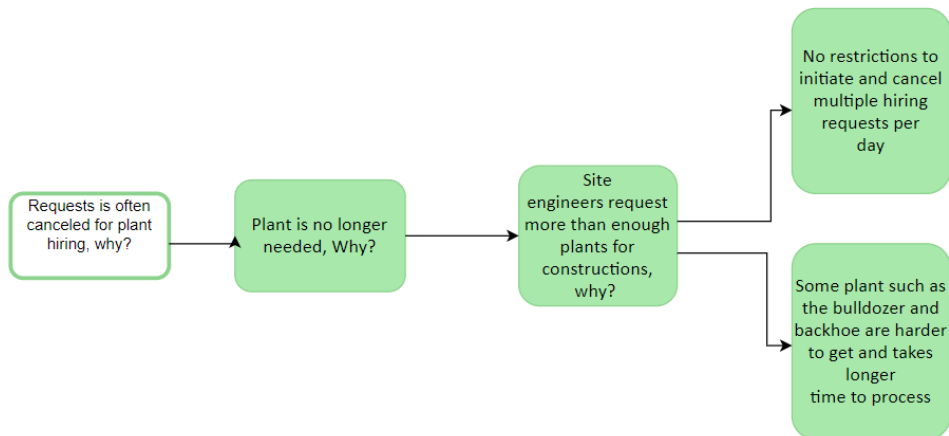
Regarding the first issue, Our analyst found a dozen examples of requests for hiring plant being cancelled after interviewing the clerks. The analyst discovered that in most of these cases, many plants were initially requested but then cancelled within three hours. The analyst discovered that it is usual for site engineers to request more than enough plants for constructions after additional analysis of the data. It came out that site engineers found out that there are no restrictions to initiate and cancel multiple hiring requests per day. They also knew that some plant such as the bulldozer and backhoe are harder to get and takes longer time to process. As a workaround, some site engineers initiate multiple hiring request to increase the chance to get their desired plant. When one of the hiring request process is approved, they just called the supplier to cancel all other requests.

The analyst then moves on to the second problem (Hiring process restarted). The analysts begin their investigation by interviewing the clerks. The analyst found out that the hiring process is restarted because the plant is sent back due to its specifications does not comply with the site engineers need. The clerks often misunderstood the site engineer's requirements for the plant. The analyst also found that the data in the suppliers' catalogs was inaccurate and incomplete. Further interviews with the site engineers also confirmed the matter which the inaccurate data has cause misunderstanding among staffs and sometimes they failed to deliver their idea clearly towards the clerk. They also don't recheck the plant list provided by the clerks.

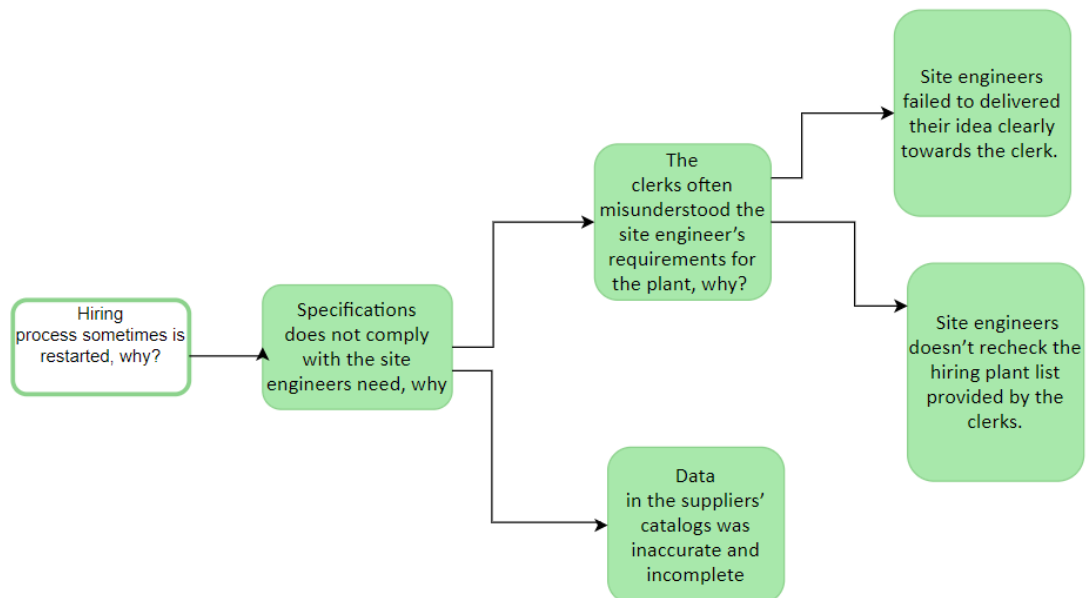
Finally, the analyst investigated the subject of fines for late invoice approval. Again, the analyst discovered that the problem stemmed in part from clerks' inability to convince site engineers to approve invoices after obtaining a sample from the records and interviewing the clerks. Site engineers believe they are too preoccupied with the construction to complete their portion of the approval. The clerks also pointed out that the purchase order and the invoice were frequently out of sync. One of the reasons for the inconsistency was that some of the site developers devised a workaround to avoid having to redo the hiring process: If they want to change the hiring plant, the site engineer will call the supplier directly and inform them of the equipment that needs be

delivered. As a result, the actual plant delivered frequently differed from the one described in the purchase order.

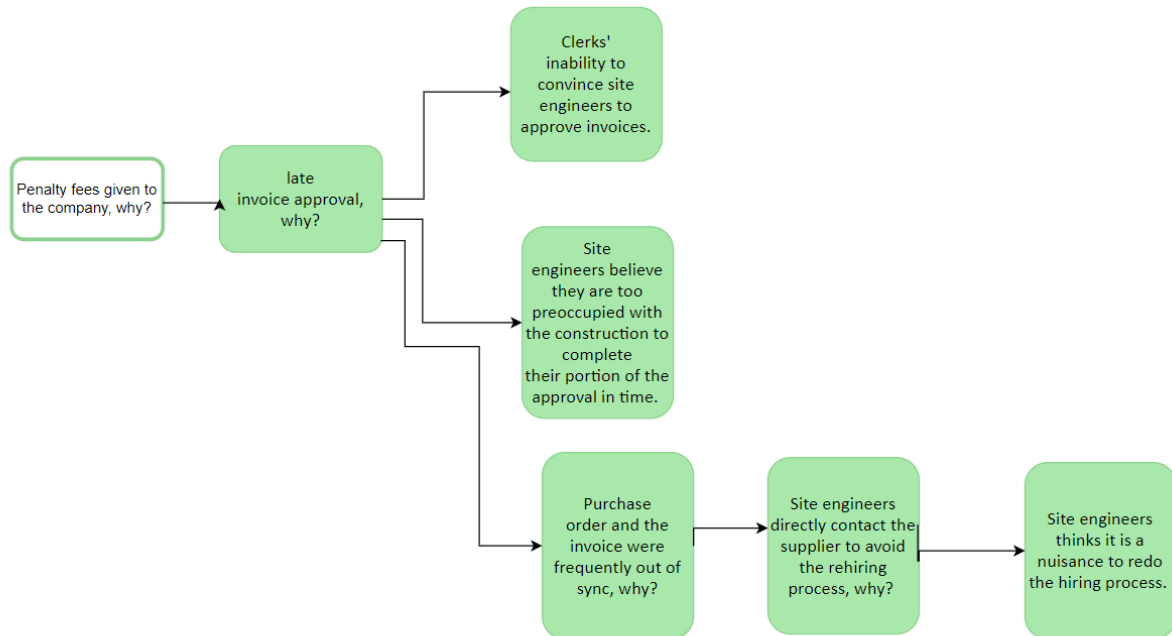
#### Issue 1:



#### Issue 2:

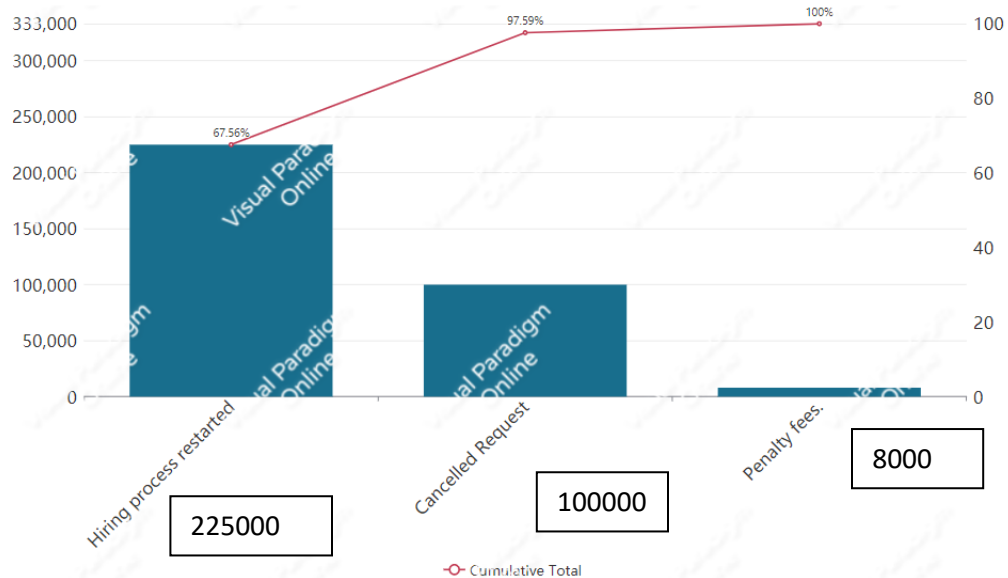


### Issue 3:



### c) Pareto analysis

#### Pareto chart for excessive plant rental expenditure



2)

**a) A brief description of the process change**

Through investigation, we think that MegahBina should add a restriction which a site engineers is only allowed to make one hiring request at a time. This is to avoid site engineers taking advantage for it and stop them from abusing the hiring system, causing confusion and errors. The company should also negotiate and make contract with other supplier with more plants that the current supplier fails to provide in a huge scale. This is to support future constructions project and provides more support to our site engineer. We also think that our site engineers do not recognize the importance of confirming a hiring process. Due to that, we propose to add a penalty fees to the clerk and site engineer if they cancelled more than five hiring process a year. We should also inform our supplier to renew their inaccurate catalog. The hiring process should be simplified and speed up. We found that the waiting time and engagement time for the hiring process takes too long for the staffs. After research we found that some staffs are slow on their work. Hence, we suggest adding the staff's efficiency into their key process indicator (Average task completion rate) for future raise and promotion. After the hiring process is speed up, we propose to also add a penalty fees on site engineer and clerks who had approves the invoices late. We understand that some force majeure could happen so the penalty fees will only be applied on individual who had approve their invoice late more than five times per year.

**b) Which issue(s) are being addressed by the proposed change?**

Through adding restrictions, the site engineers can no longer abuse the hiring system hence the amount of cancelling request will be cut down by a huge portion. By negotiating and making contract with other supplier with more plants, **request cancelling will no longer be a problem to our company**. By applying penalty fees for site engineers that cancelled hiring process frequently, we believe that the site engineers and clerks will finally recognize the importance of confirming a hiring process. **The issue of hiring process getting restarted will be addressed**. As a business partner, we will also inform our supplier about their inaccurate catalog to avoid confusion and having the hiring process restart for no reason. By speeding up our hiring process, we think that **the issue of penalty fees on late approval of invoice will be addressed**. By applying penalty fees, we also think it would help site engineers to reduce procrastinating on their invoices.

**c) How feasible is this change? In other words, how likely it is that the change can be implemented in a way that the benefits of the change exceed the costs in the medium-term (six months to one-year timeframe). If the change requires an upfront investment, describe what investment is needed and how likely it is that this investment is justified given the impact of the issue that is being addressed.**

**Add a restriction which a site engineers is only allowed to make one hiring request at a time.**

This is feasible, since the restrictions can be added immediately but we need to give the site engineers some time to adapt to new rules and new changes.

**Negotiating and making contract with other supplier with more plants**

This is arguable feasible, making a new contract with a new supplier could be both time exhausting and cost exhausting. These changes will pay off hugely if succeeded and benefits the company in a long run.

**Adding penalty fees on site engineers and clerks with frequent late invoice and restarting hiring process**

This is quite feasible, but the site engineers and clerks could be unsatisfied about the new changes. We need to give them time to adapt to it before adding the penalty fees.

**Speeding up hiring process**

This is quite feasible, We need to give them time to adapt to it before adding speeding up the hiring process. The motivation given to the staffs will benefits the company in a long run.

**Inform our supplier about their inaccurate catalog**

The is arguably feasible, they might not comprehend our complaint and make adjustment.