INFO-H420
Management of Data Science and Business Workflows
Practice Session– Solutions
Process Redesign

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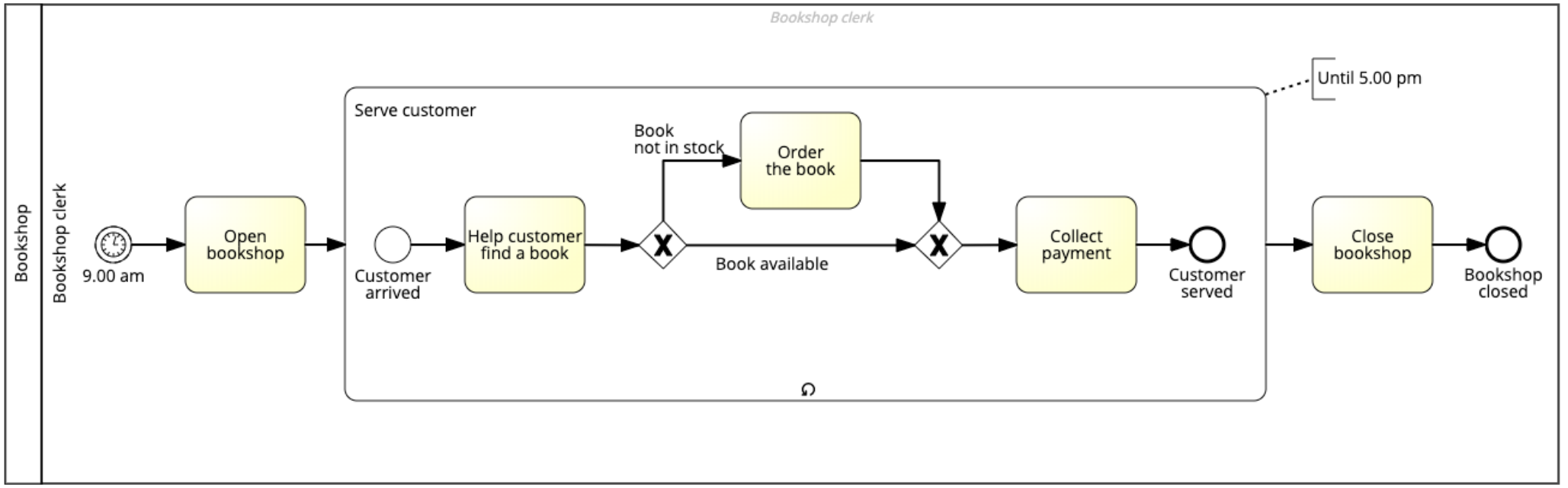
Recall the BPR principles

1. Capture information once and at the source
2. Subsume information-processing work into the real work that produces the information
3. Have those who use the output of the process drive the process
4. Put the decision point where the work is performed, empower workers to decide, and build control into the process
5. Treat geographically dispersed resources as though they were centralized.

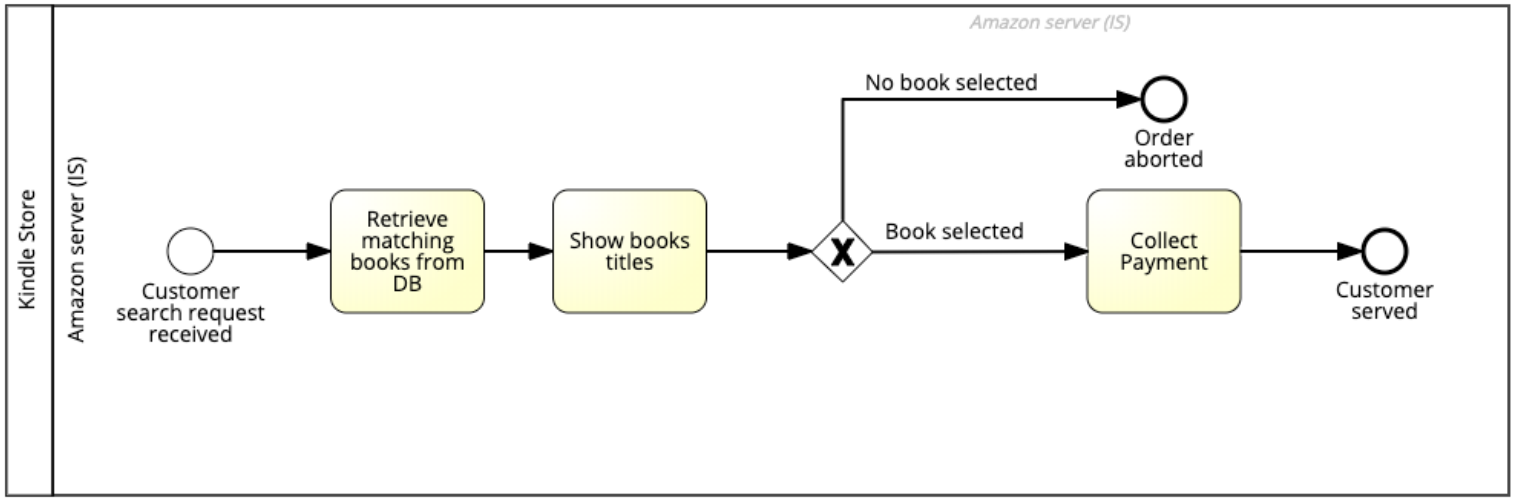
Exercise 1

Consider the order-to-cash process of a bookshop, pictured below. In the past decades, most of the bookshops have redesigned this process, transitioning from physical stores to digital stores. Among them, the most popular and successful example is the Amazon Kindle store.

1. Draw the order-to-cash process of the Amazon Kindle Store.
2. Compare the Amazon Kindle store order-to-cash process with the physical store order-to-cash process and list what BPR principles may have led the redesign.



Exercise 1 – Solution



BPR principle 1: Capture information at the source, do not ask repeatedly for the same information, get the information from who produces it.

- All the information about the available books is store in a single information system, which can be access by the customers anytime and anywhere. The publishers can upload their books automatically on the Amazon Kindle store.

BPR principle 3: Have those who consume the output of the process drive the process.

- Now the customer drives the whole process from start to end.

Exercise 2

Propose a set of process changes that implement one or more of the BPR principles.

A client calls the help desk or sends an email in order to make a request. The help desk is staffed with 5 Level-1 support staff who, typically, are junior people with less than 12 months experience, but are capable of resolving known problems and simple requests. The hourly cost of a Level-1 staff member is €40.

When the Level-1 employee does not know the resolution to a request, the request is forwarded to a more experienced Level-2 support staff. There are 3 Level-2 staff members and their hourly cost is €60. When a Level-2 employee receives a new request, he or she evaluates it in order to assign a priority level. The ticketing system that tracks the process will later assign the request to the same or to another Level-2 staff depending on the assigned priority level and the backlog of requests.

Once the request is assigned to a Level-2 staff member, the request is researched by the Level-2 employee and a resolution is developed and sent back to the Level-1 employee. Eventually, the Level-1 employee forwards the resolution to the client who tests the resolution. The client notifies the outcome of the test to the Level-1 employee via email. If the client states that the request is fixed, it is marked as complete and the process ends. If the request is not fixed, it is resent to Level-2 support for further action and goes through the process again.

Requests are registered in a ticketing system. The ticketing system allows help desk employees to record the details of the request, the priority level and the name of the client who generated the request. When a request is registered, it is marked as "open". When it is moved to Level-2, it is marked as "forwarded to Level-2". When the resolution is sent back to Level-1, the request is marked as "returned to Level-1". Finally, when a request is resolved, it is marked as "closed". Every request has a unique identifier. When a request is registered, the ticketing system sends an email to the client. The email includes a so-called request reference number that the client needs to quote when asking questions about the request.

Exercise 2 – Solution

BPR principle 1: Capture information at the source, do not ask repeatedly for the same information, get the information from who produces it.

- Categorise the issues handled by Level-1 and by Level-2 staff, let the customer choose the issue category at the moment of submitting their help-request.

BPR principle 4: Empower process participants to make their own decisions, provide them with information needed to make decisions by themselves. Add a-posteriori statistical control.

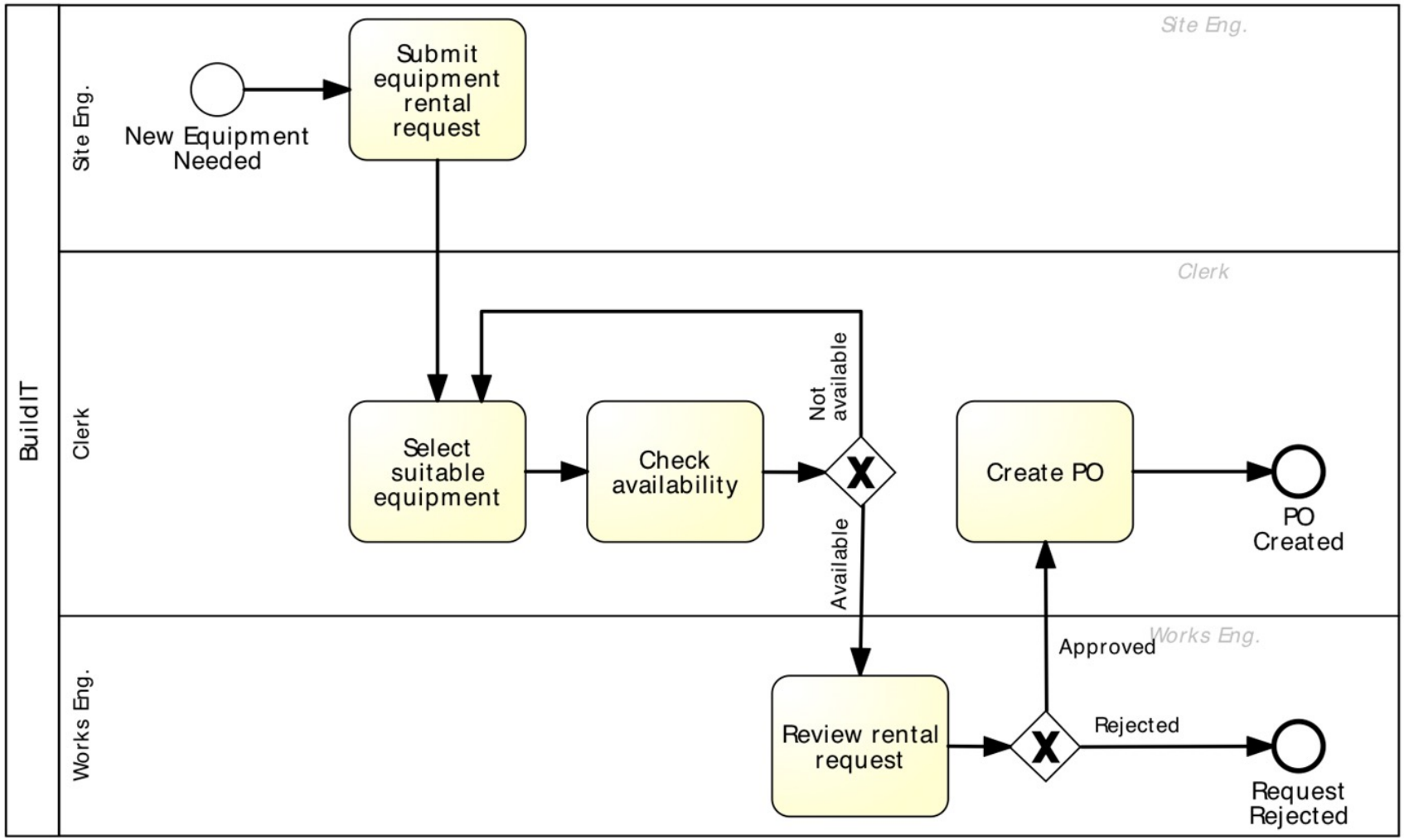
- Automate the dispatching of the requests according to the category chosen by the customer. Apply statistical control to check whether the requests are dispatched correctly or not to Level-1 and Level-2.

Recall the Redesign Heuristics

Task-level	• Task elimination • Task composition/decomposition • Triage
Flow-level	• Re-sequencing • Parallelism enhancement
Process-level	• Specialization & standardization • Resource optimization • Communication optimization • Automation

Exercise 3

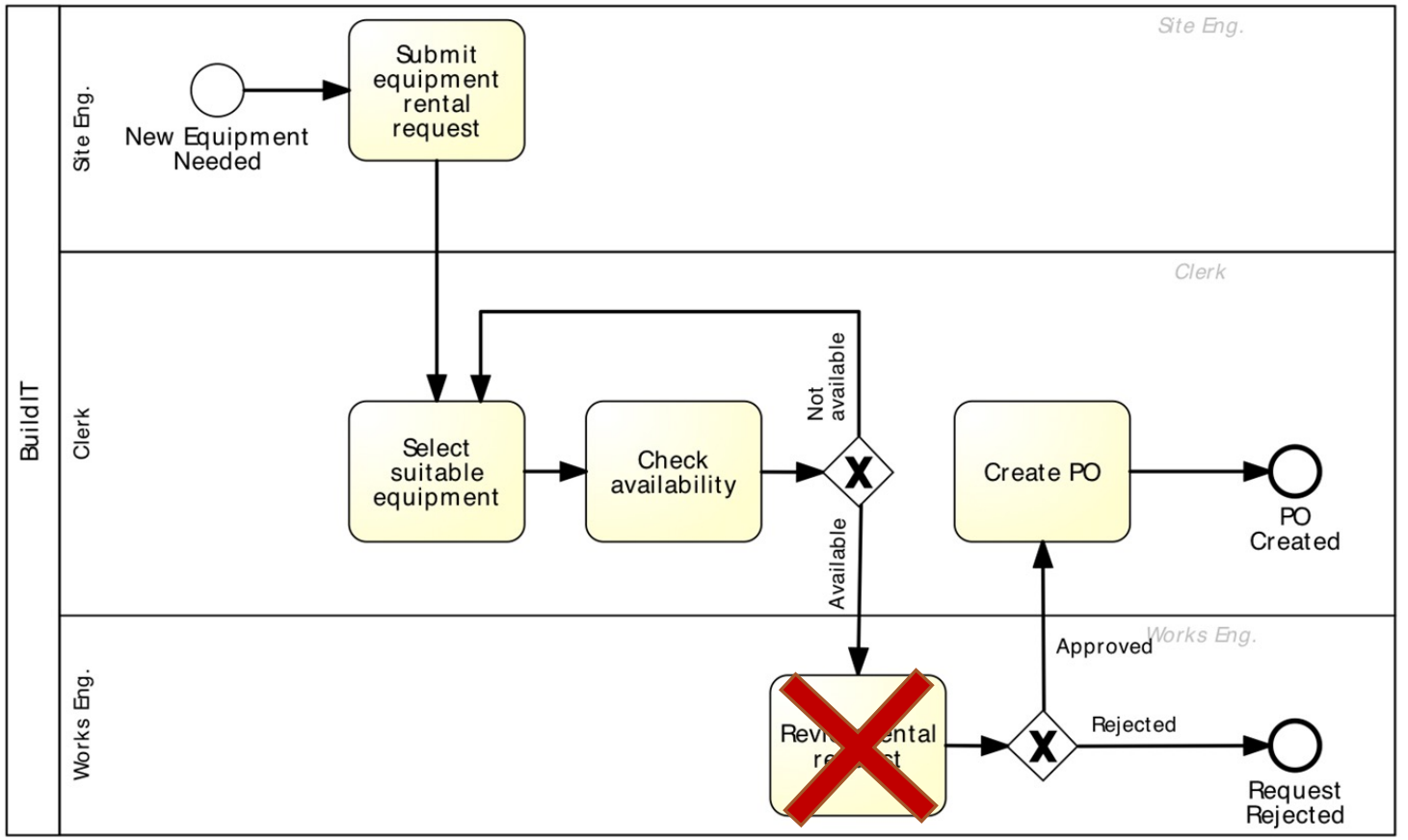
Apply the Redesign Heuristics to this process



Exercise 3 – Solution

Heuristic 1: Task elimination

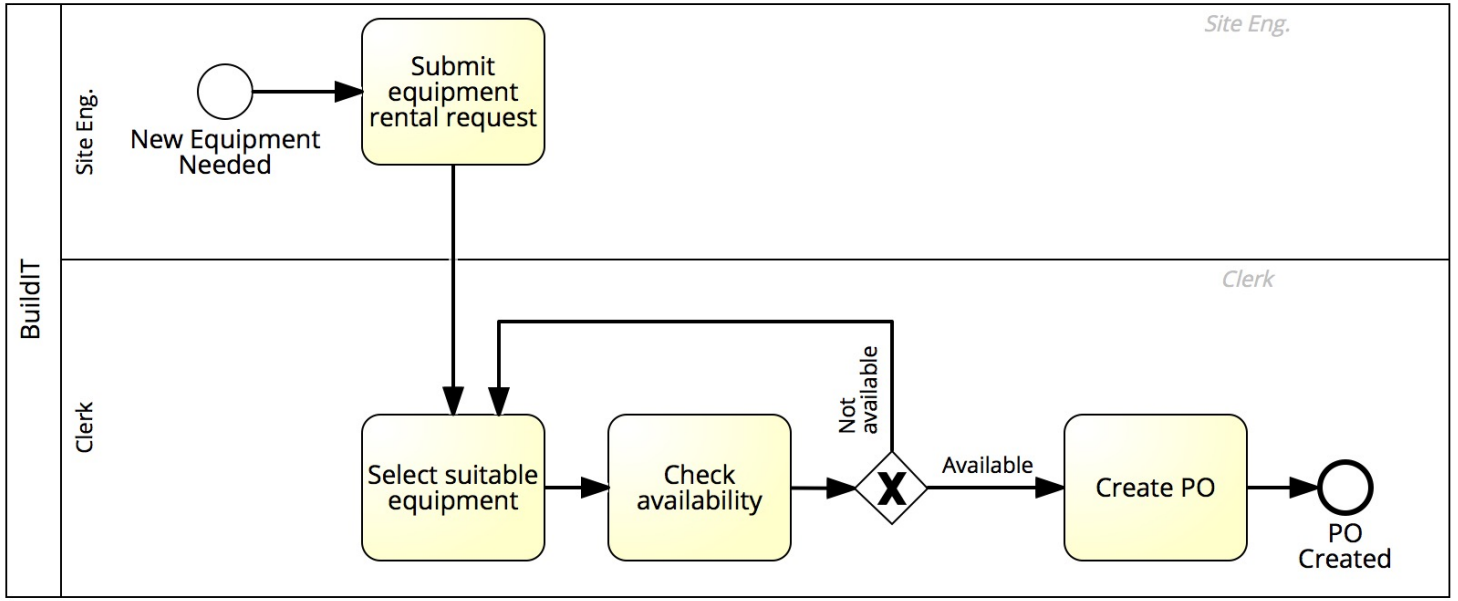
- Eliminate “Request for approval” for *small* equipment



Exercise 3 – Solution

Heuristic 1: Task elimination

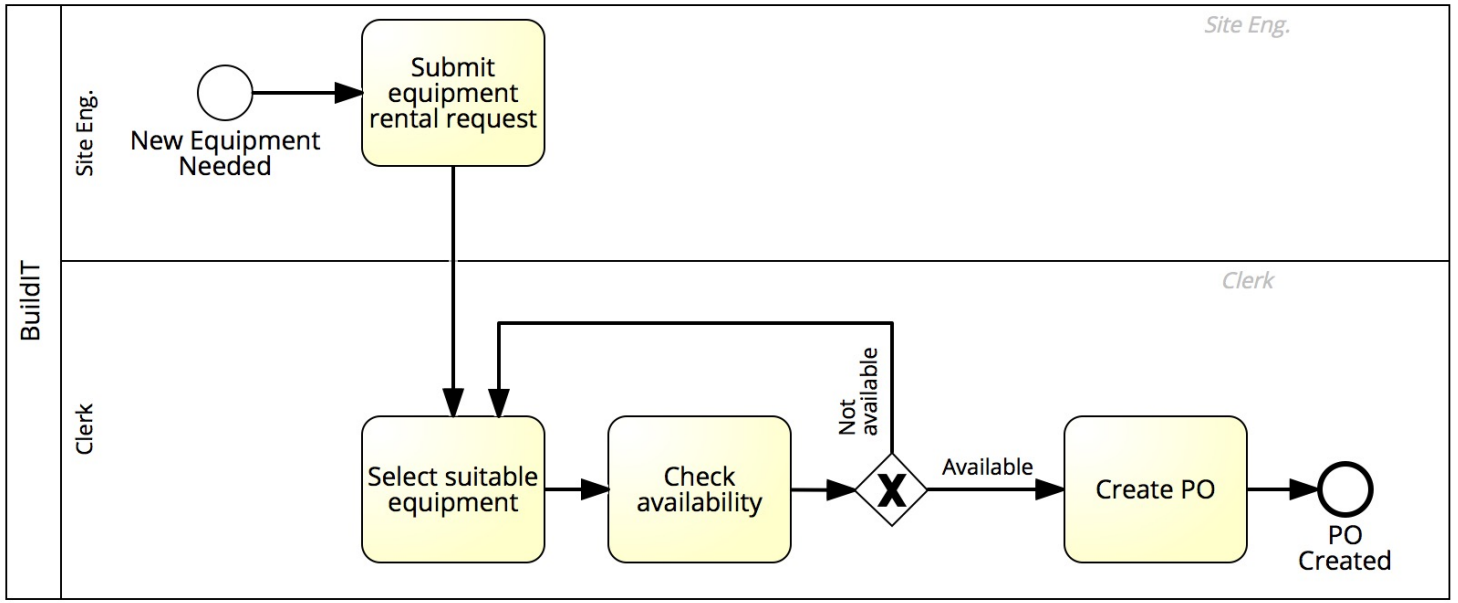
- Eliminate “Request for approval” for *small* equipment



Exercise 3 – Solution

Heuristic 1: Task elimination

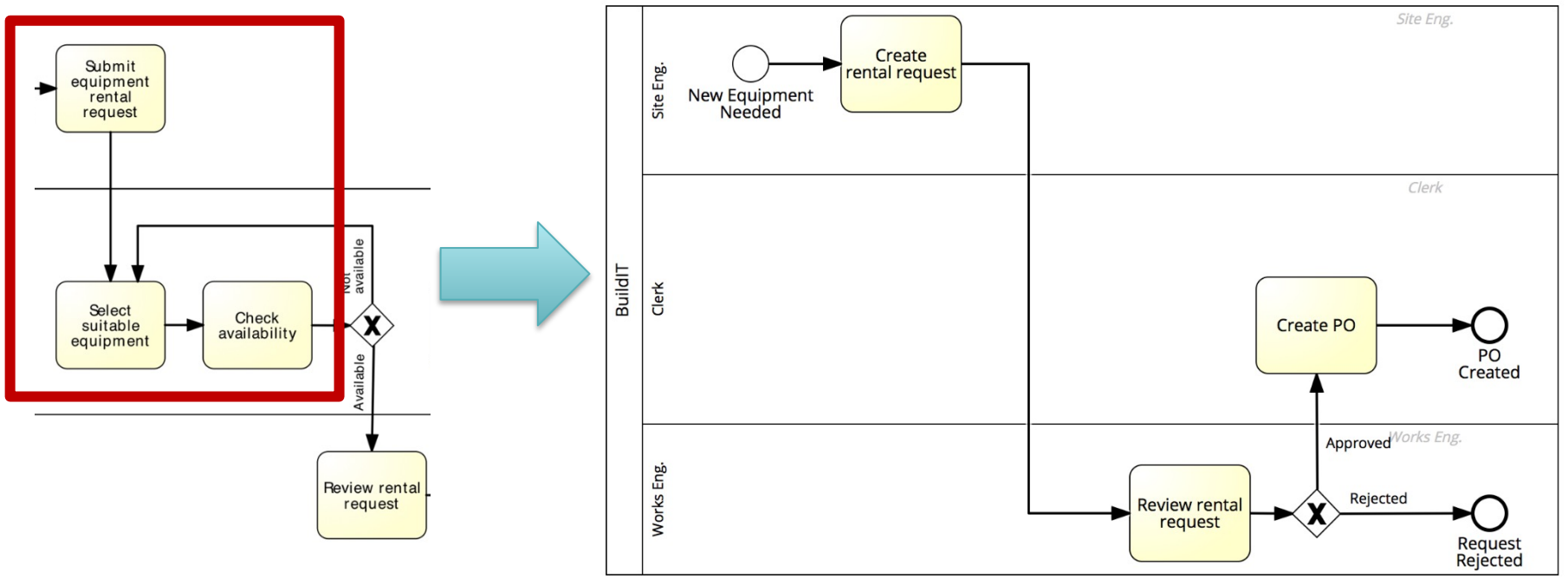
- Eliminate “Request for approval” for *small* equipment
- Replace approval in all cases, with empowerment and statistical controls



Exercise 3 – Solution

Heuristic 2: Task composition

- Merge equipment selection, availability check and rental request creation

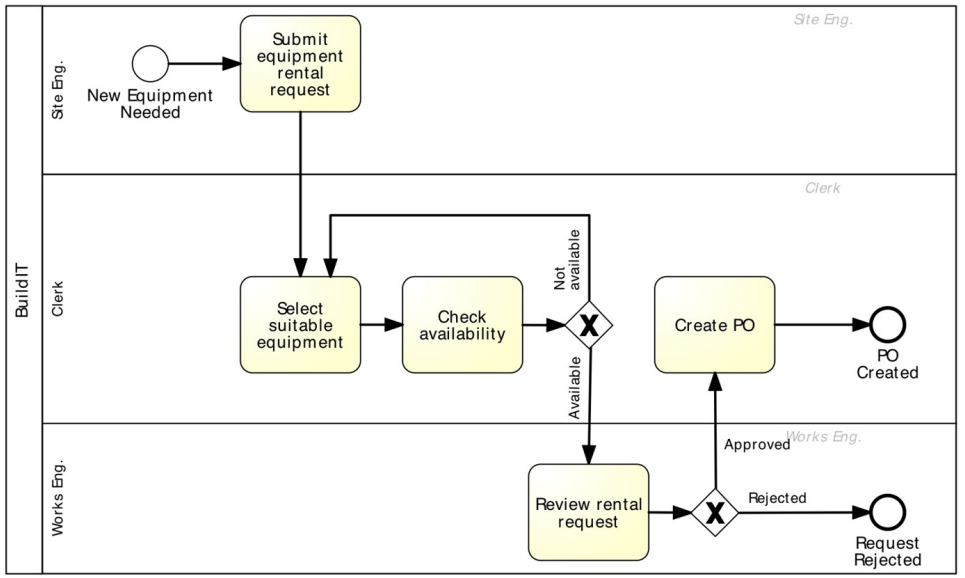


as-is process

Exercise 3 – Solution

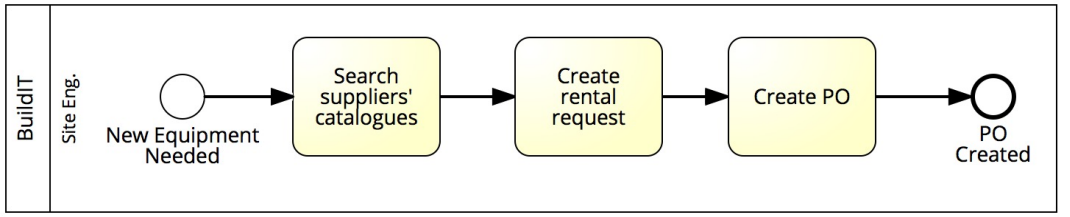
Heuristic 6: Process specialisation and standardisation

- Separate the process for small versus large equipment and streamline the process for small equipment



as-is process

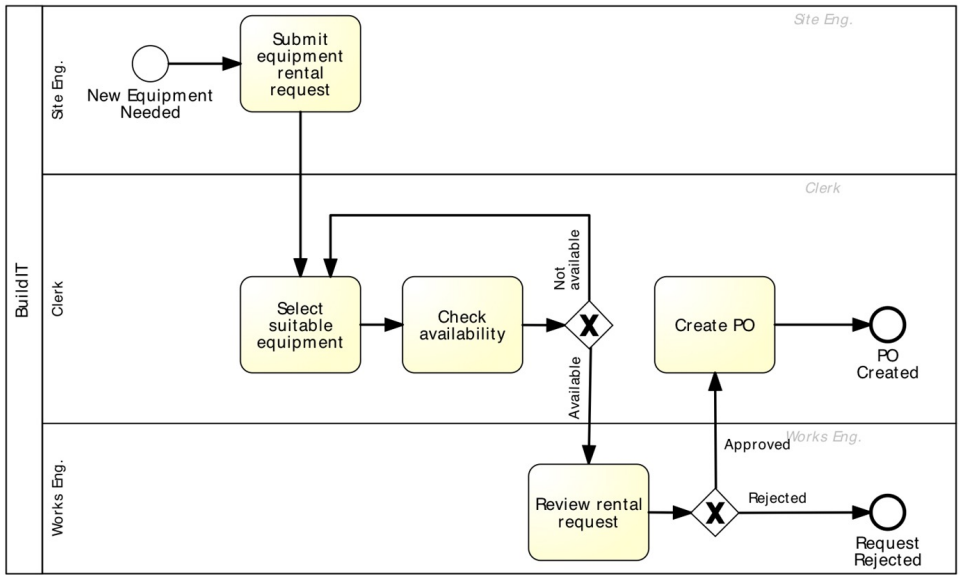
Small equipment



Exercise 3 – Solution

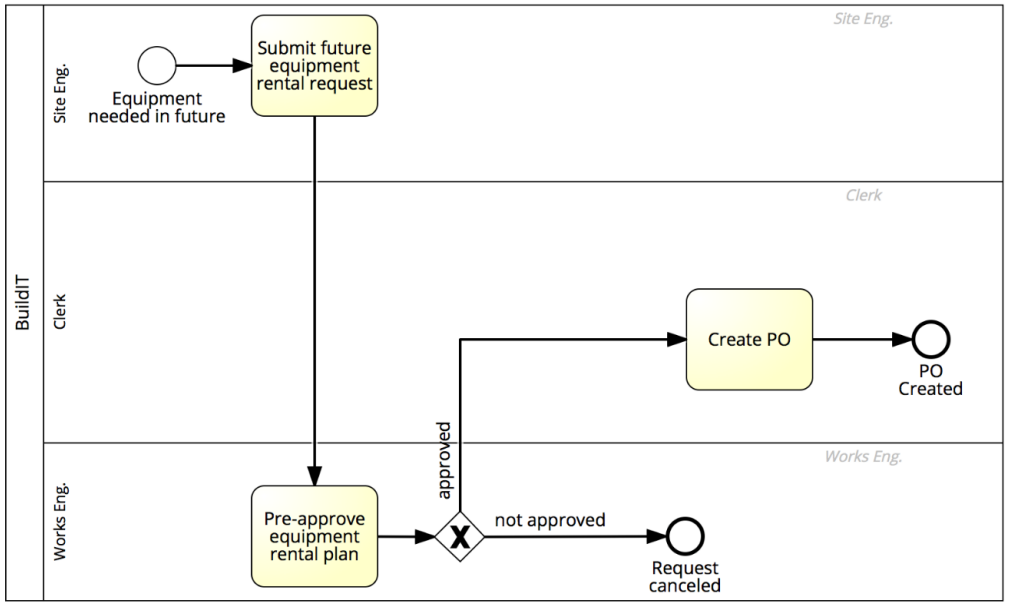
Heuristic 6: Process specialisation and standardisation

- Separate the process for small versus large equipment and streamline the process for small equipment



as-is process

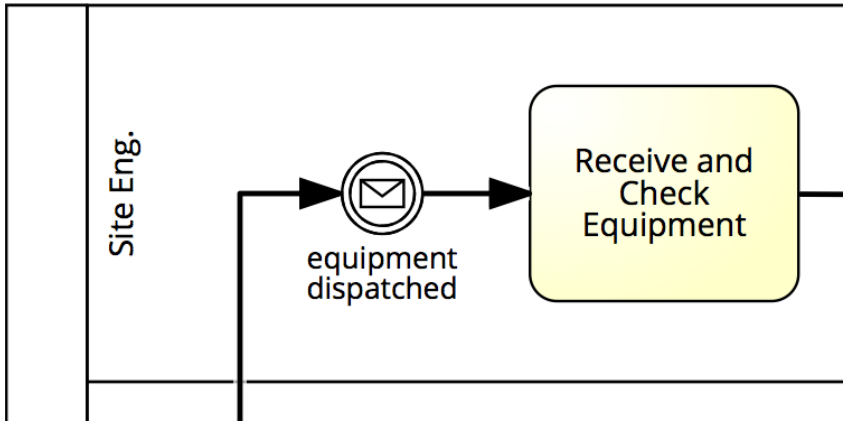
Large equipment



Exercise 3 – Solution

Heuristic 8: Communication optimisation

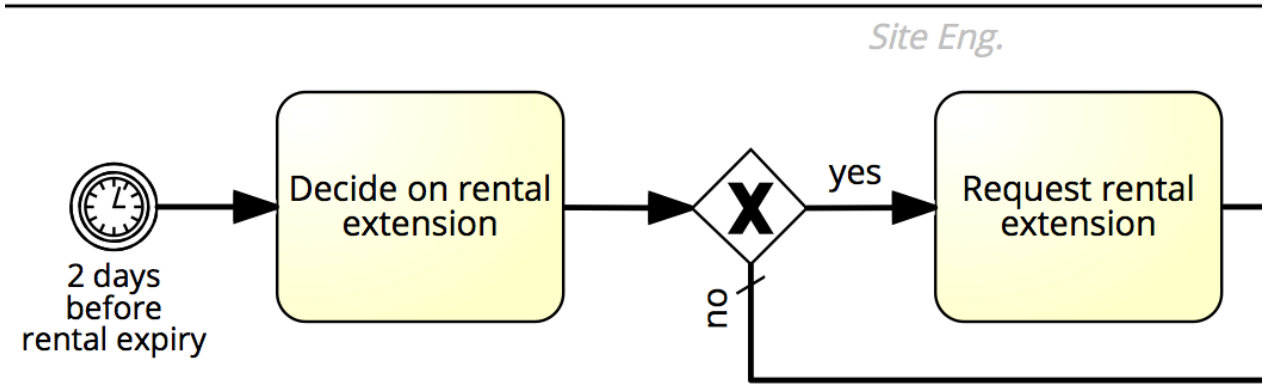
- Inform the site engineer when the equipment is dispatched



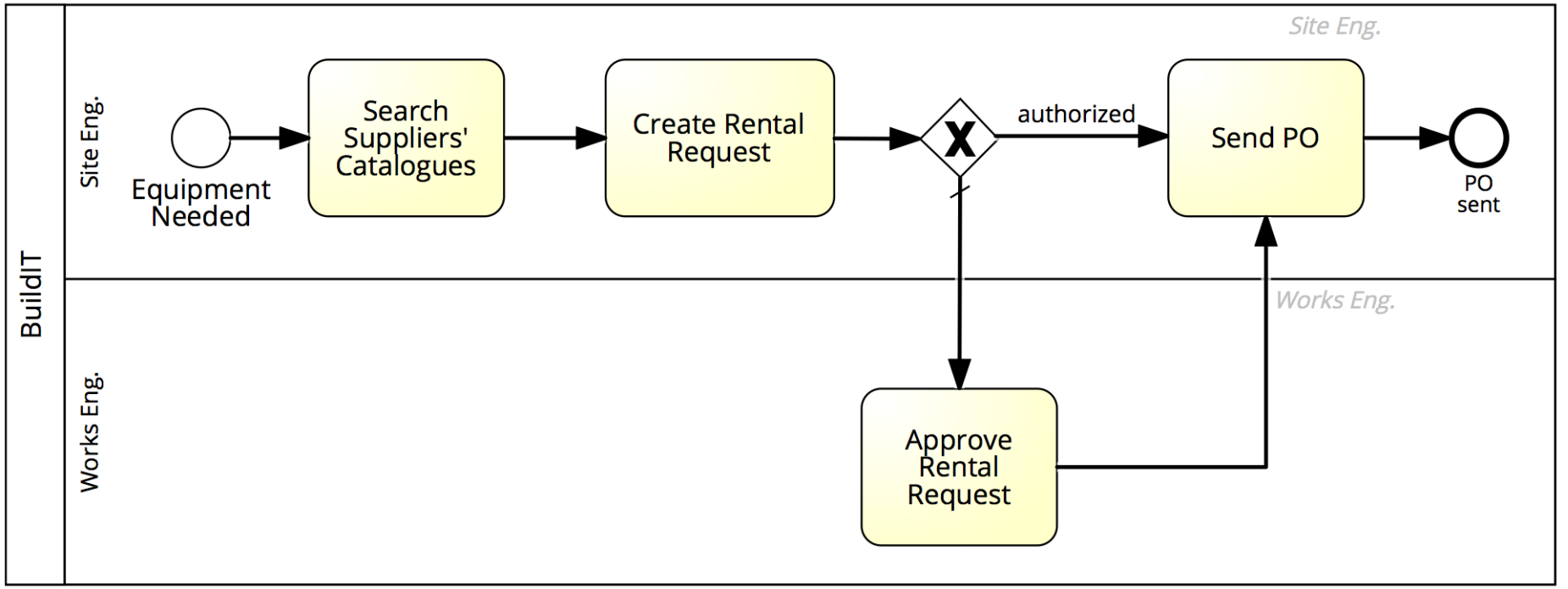
Exercise 3 – Solution

Heuristic 8: Communication optimisation

- Inform the site engineer when the equipment is dispatched
- Add interaction to handle extensions



Exercise 3 – Solution

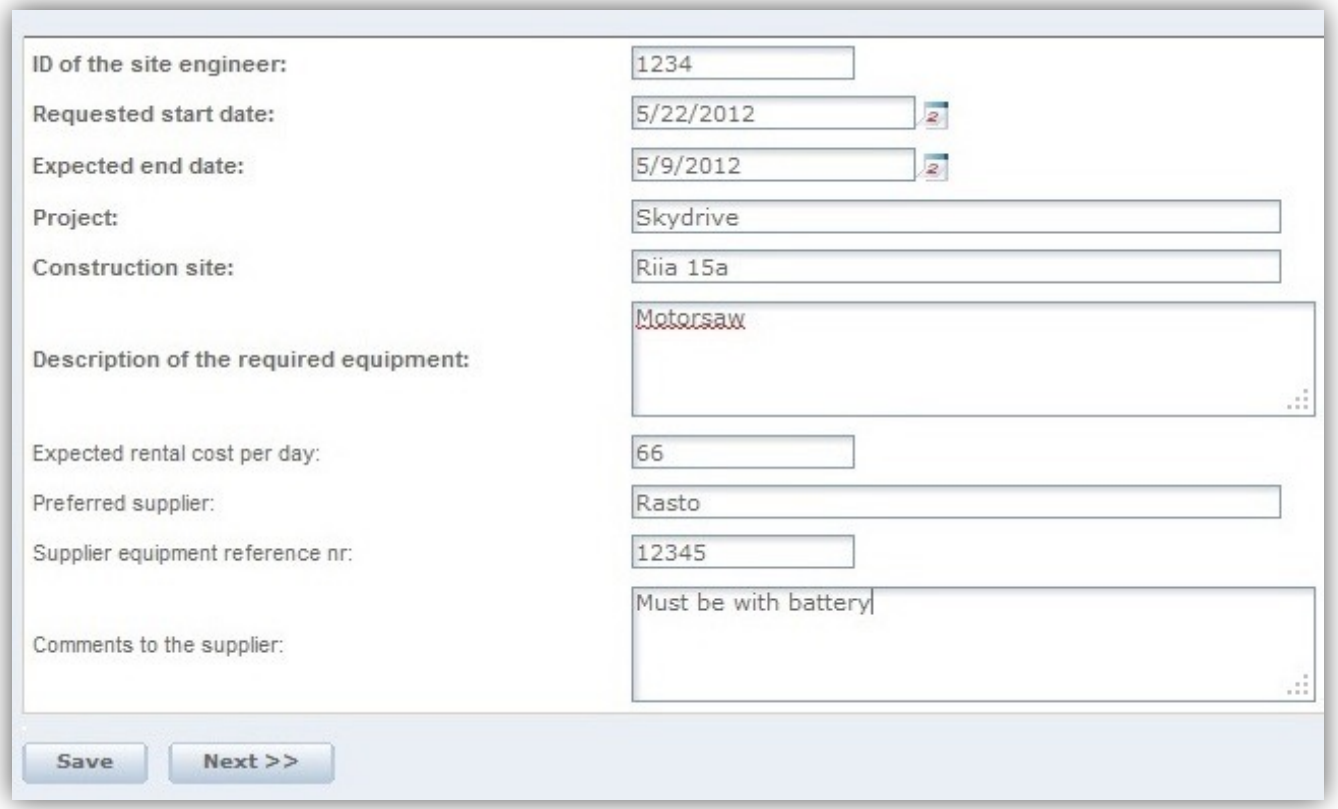


to-be process

Exercise 3 – Solution

Heuristic 9: Process automation

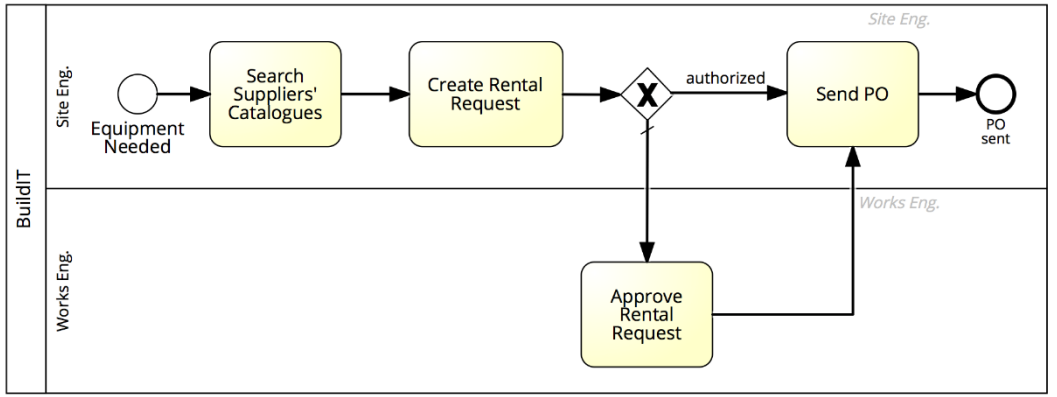
- Use self-service for the equipment search and availability checking



Exercise 3 – Solution

Heuristic 9: Process automation

- Use self-service for the equipment search and availability checking
- Use process automation to coordinate handovers



Process Support

Exercise 3 – Solution

Heuristic 1

- I1. Eliminate request for approvals for small equipment
- I2. Replace approval with empowerment & stat. controls

Heuristic 2

- I3. Compose equipment selection, availability check and rental request creation

Heuristic 6

- I4. Separate process for small vs. large equipment, streamline “small” process

Exercise 3 – Solution

Heuristic 8

- I5. Inform site engineer when equipment dispatched
- I6. Ask site engineer if extension required

Heuristic 9

- I7. Use self-service for equipment search and availability checking
- I8. Use process automation to coordinate handovers