

Improving the service level of the Material Management Department at Keppel FELS

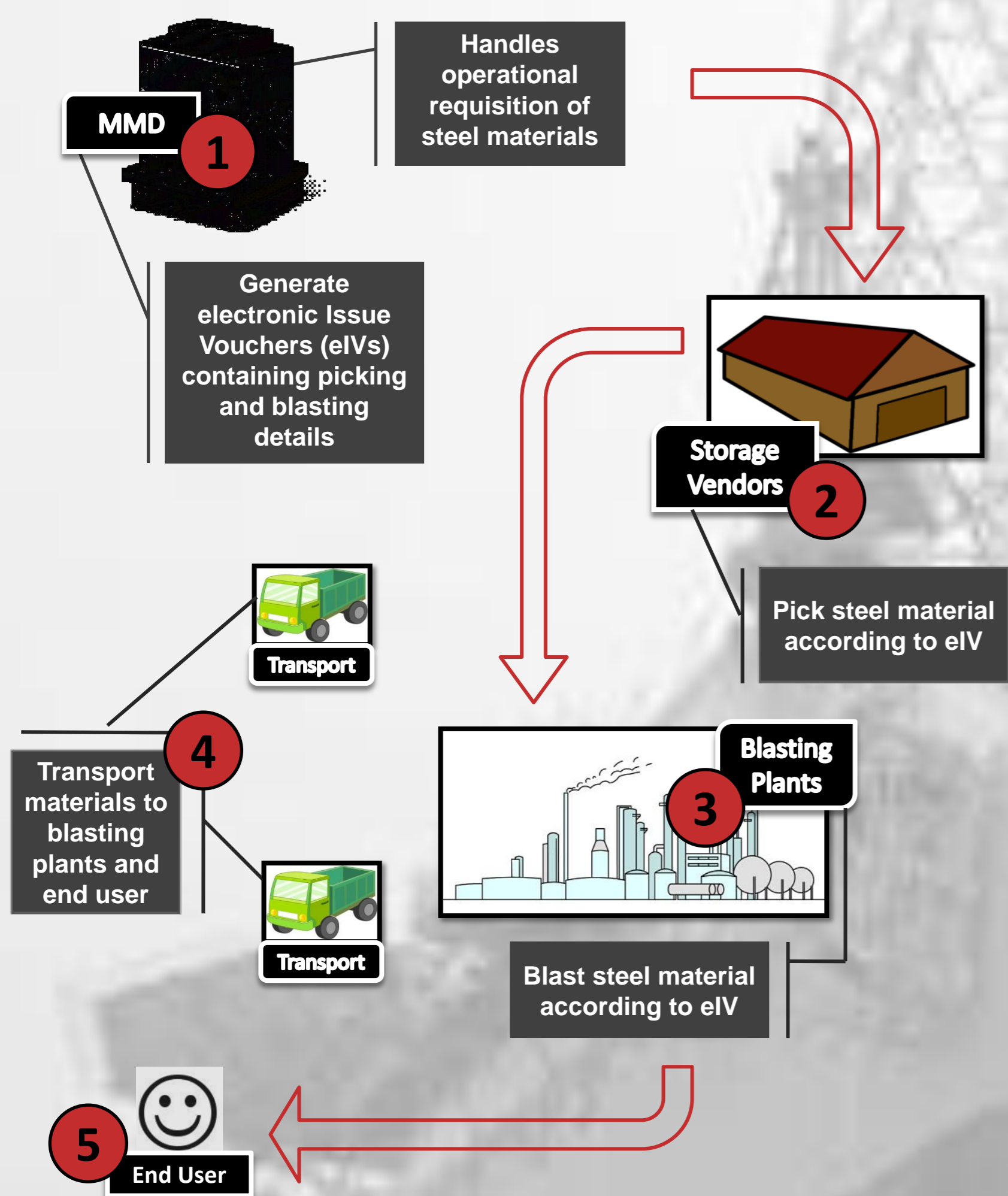
Scope of Project

- Identify areas of concern
- Investigate reasons for delays
- Come up with possible solutions
- Focus on operations handled by Keppel only
- Categorize the whole process into 3 main operational activities in our investigation: *1) Storage; 2) Blasting; 3) Transportation*

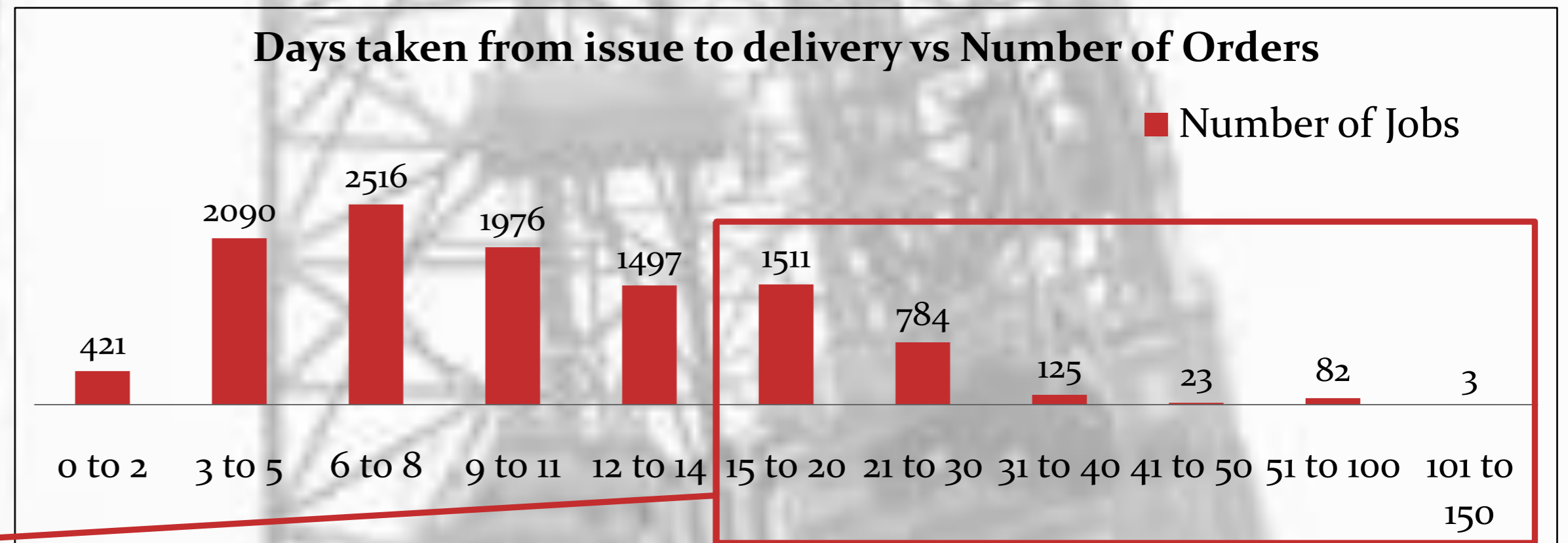
Aims & Objectives

- Give client a clearer picture of the reasons for delay
- Pinpoint areas which can be improved
- Potentially increase % of orders that meet KPI and capability to meet PRD

Workflow of MMD



Problems Faced



- Delays occur during the requisition process
- 14 days is the KPI set for the department
- Chart shows that about **23%** of orders take > 14 days to complete

Study Methodology

1. Statistical Analysis of Historical Data

- Determination of current capabilities of process
- Detailed analysis of capabilities of individual activities
- Analysis to pinpoint sources of delays that do not meet KPI
- Investigate the impact of outsourcing picking to 3PL
- Appraisal of 4-3-3 timeline to complete requisition process

2. Process Mapping of Picking, Blasting & Delivery

- Detailed mapping of the 3 operational activities
- Consider 2 main elements in the process flow: *1) Information flow; 2) Material flow*

- Identified non-value added activities which could be eliminated or shortened
- Identified exceptions as a source of potential problems
- Qualitative recommendations given to improve process capabilities
- Future measures taken to quantify process capabilities

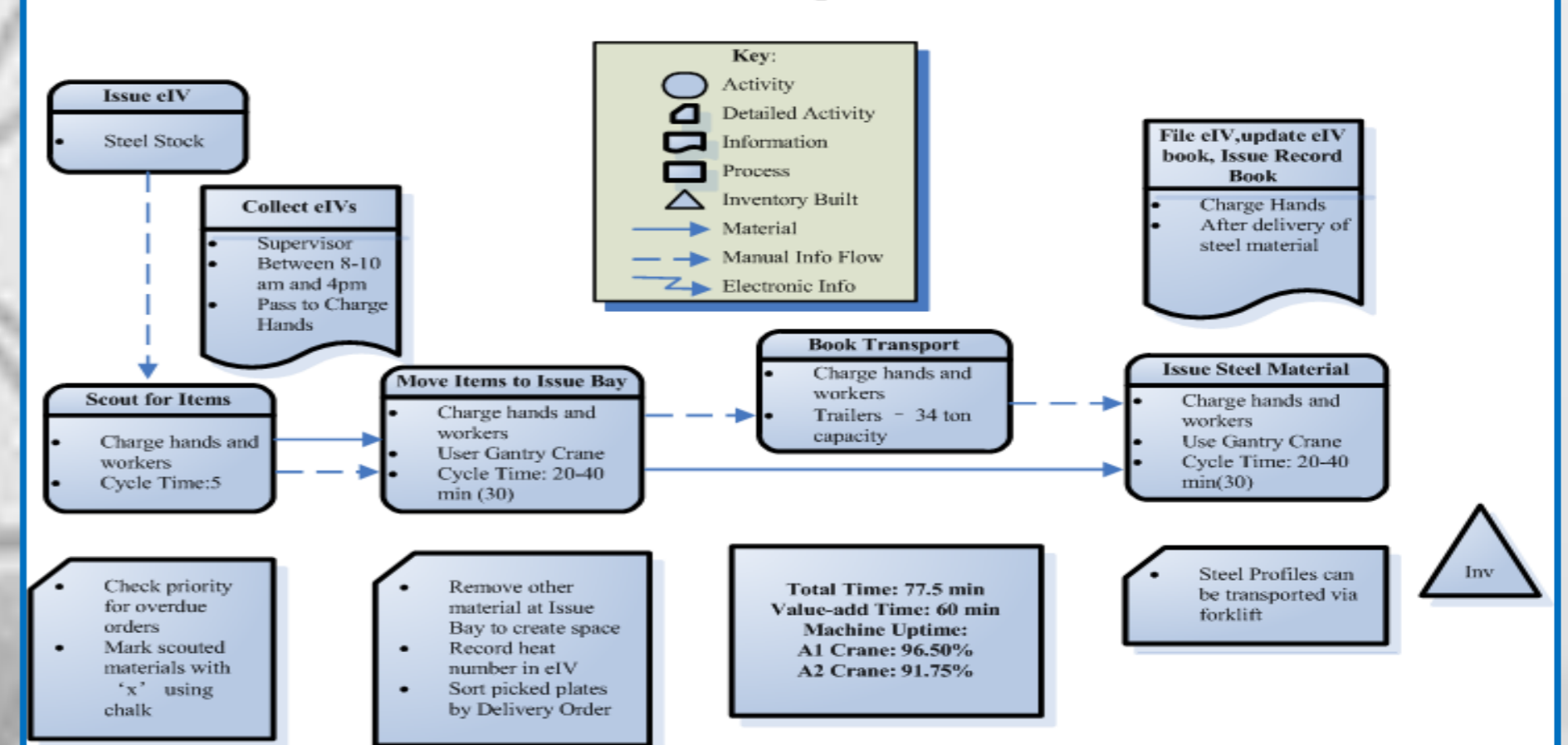
Service level (%)

	2 days	3 days	4 days	5 days	6 days	7 days
Picking (Combined)	32.4	41.2	49.1	56.7	63.7	71.0
Picking (KFELS only)	69.0	76.8	81.1	84.9	86.7	88.7
Blasting	71.2	84.0	89.6	92.7	94.8	96.3
Transportation	71.8	81.8	87.4	91.0	93.5	95.4

Results

- Modifying **PICKING** activities gives greatest improvement
- Recommended timeline is **6-2-2** where service level is maximized at 63.7% for a 10 day period (4-3-3 timeline only fulfills 57.5% service level)
- Agreements with 3PL vendors should be re-examined to improve inefficiencies

Issue from Storage Yard (KFELS)



An example of Process Mapping – Picking activity

- Breakdown of the process in highly detailed parts
- Take into account all interactions among everyone involved
- Total time taken is calculated