System Vision Document for Work Orders Information System
Client: Some Maintenance Services Contractor

Problem Description

The company performs recurrent maintenance activities on a variety of asset classes distributed across a number of locations according to agreed frequencies. Additionally, adhoc works may be authorised by the asset owner upon asset breakdown or when indicated by equipment condition during periodic maintenance.   There are a lot of challenges in managing and executing said works owing to the complexity and variety of procedures, parts and interaction of various skill sets. A number of things can prevent the work being done well, cost effectively and at the agreed frequency. Poor planning can lead to lack of parts and equipment availability; poor allocation of staff leading to safety problems; poor work quality; resource under- and over-utilisation; employee stress and turnover, these factors all combining together to increase costs. Over-utilisation of employees is an industrial relation and safety issue.

System Capability:

At a high level, the capabilities indicated for the early phases of agile development are:

- Store maintenance activities and recommended job frequencies for various asset classes.
- Store details of the individual tasks in a maintenance activity and the associated skills, tooling and bills of material required.
- Store a list of assets instances and service agreements.
- Records of employees' skills and licences.
- Plan instances of recurrent maintenance activities for an asset instance (jobs) in advance of due date, allocate employees, a raise purchase requests for the required parts.
- Produce look ahead reports comparing resource requirements vs availability.
- Show calendars for planned jobs x all | individuals.
- Record jobs done, date completed and file notes.

Business Benefits

These new capabilities will improve cost position, quality of work and timeliness, thus increasing competitiveness, profitability and customer satisfaction. The specific benefits include:

- Better coordination of job teams, and timeliness of job completion in accordance with service agreements.
- Reduced cost of parts due to increased use of economy freight over express service.
- Improved safety performance; reduced employee stress and turnover.
- Reduced equipment failure due to poor work quality and overdue maintenance.

Summary of User Stories

A number of things are required to ensure the work is done well, cost effectively and at the agreed frequency. Managers need to be able to look ahead and ensure that appropriate levels of human resources are available such that cost /under-utilisation is minimised, and over-utilisation is avoided. A maintenance team leader (or planner) needs to plan a job (instance of a maintenance activity) according to parts and equipment availability. Employees which have the correct skill set(s) need to be allocated to these jobs.

Employees need to be able to access maintenance descriptions and procedures. Employees need to be able to flag rejection of a job based on their availability and the suitability of their skills and personal tool kit. If job requires multiple people, a job leader needs to be nominated to coordinate the team and be responsible for equipment isolations. Someone needs to order parts, track delivery, and set them aside so not misplaced or mixed up with parts for other jobs. A daily schedule needs to be prepared in advance in a way that prevents clashing with other jobs appointments or employee days off.

Further, jobs involving multiple people need to executed in a coordinated fashion with all member of the job team. Further, employees need to be able to see their daily plan so that they can prepare toolbags and personal requirements for the day's activities.

Exclusions

Aspiration capabilities (indicated as a possibility for later phases of agile development) include:

- Adhoc work orders.
- Provide reports showing Costs of Services Provide and margin by contract, asset and job.
- PO tracking/status.
- Record customer contact details.

The following capabilities are definitively excluded from the proposed system:

- ERP inventory system – is covered by the existing system
- Providing credit balances and aged accounts for each customer
- Providing credit history reports for a customer and automated drafting of notice letters for overdue accounts.