Equipment Check-Out System - ECS

INTRODUCTION

In this section you will learn the background information that will prepare you to understand and complete each of the milestones of this case study. This information includes a history of the business, a description of the business's current facilities, and the descriptions of the problems that triggered the project.

Case Background

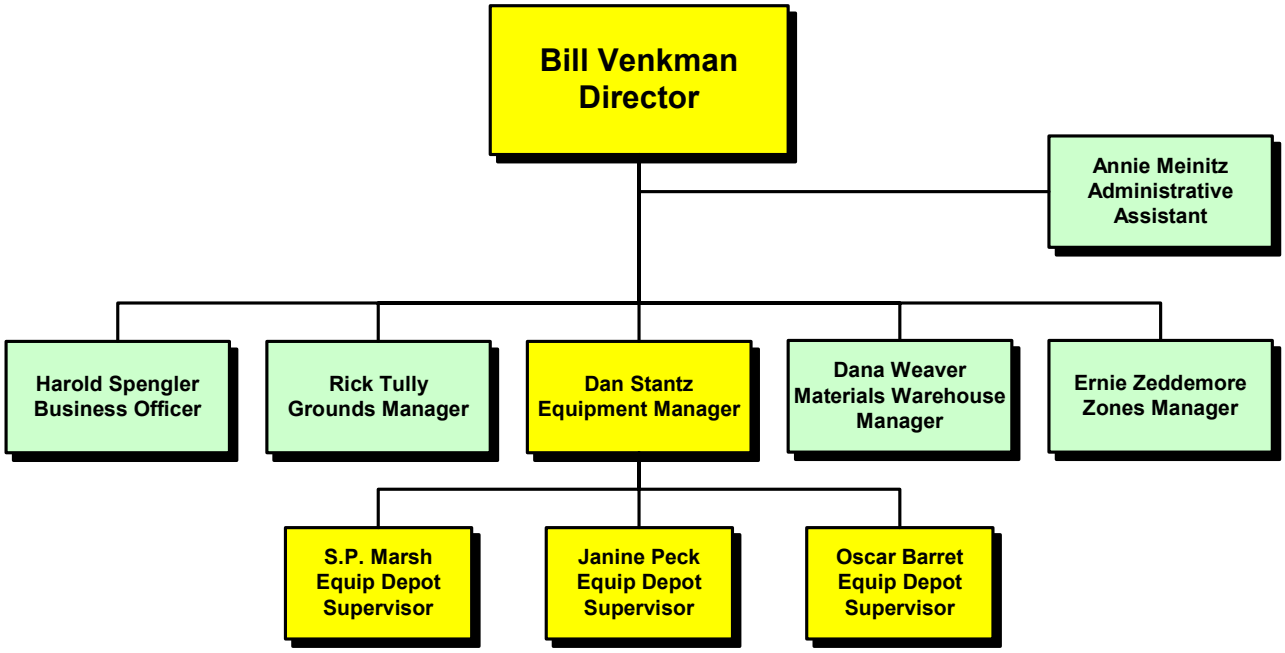
GB Manufacturing is a producer of electronic components and testing equipment. The company is located in multiple plants in the Lower Mainland area. The corporation has over 5,000 full-time employees.

Approximately 200 employees are employed with the company's Maintenance department, which is responsible for the maintenance of building and grounds. Maintenance has assigned a group of employees to provide maintenance for each building or plant. The employees assigned to each building or plant collectively possess the skills needed to provide proper upkeep. Such employees include carpenters, electricians, painters, welders, plumbers, and the like. The Maintenance department also has a group of employees with special skills to assist with special projects that may arise.

Organization Structure

The following individuals report directly to Bill Venkman, Director of Maintenance. Each of the managers has a group of foremen and supervisors that report directly to him or her, though only the supervisors of the Equipment Depot are listed below.

GB Manufacturing Maintenance Department



The Problem

In August of 2003 Bill Venkman and his management staff completed a one-week retreat aimed at assessing the maintenance operations. Several initiatives resulted from this retreat. It was determined that ***the most important initiatives were those that primarily dealt with the Equipment Depot operation***.

The function of the ***Equipment Depot*** is to provide the equipment needed by maintenance employees to perform their job duties. Employees are provided with a toolbox containing commonly used, and relatively inexpensive tools such as hammers, screwdrivers, tape measures, and so on. Other tools and pieces of equipment that are needed to complete a job must be checked out through the equipment depot. When the job is completed, the employee must return the checked-out equipment.

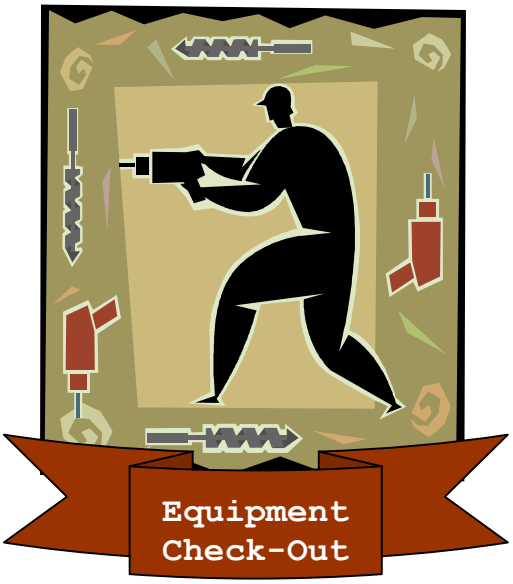
Often pieces of equipment become lost, stolen, or damaged and are therefore never checked back in and made available for others. The dollar amount of lost and stolen equipment has reached an alarming total. It has been estimated that more than $50,000 worth of tools are lost or stolen each year. Bill Venkman has decided that something must

be done to get the losses under control. Thus, ***he is giving top priority to the development of a new automated equipment check-out system that that will track the check-in and check out of equipment*.**

The Materials Warehouse is responsible for obtaining and storing supplies that are needed to complete jobs. For example, the Materials Warehouse makes sure to maintain a supply of screws, nails, plywood, drywall, and other materials. The Materials Warehouse operates in two locations. The main Materials Warehouse is a large building located approximately a mile away from the main campus. For convenience, a smaller Materials Warehouse is located on near the central office and stores a small amount of the most commonly used materials. When workers need materials for a job assignment they are supposed to check both warehouses to see if the goods are available. Unfortunately, the employees are often impatient and will simply check the availability of materials at the smaller, more conveniently located warehouse. If the goods are not available, they routinely choose to simply move on to the next job assignment — rather than checking with the main warehouse. While the main warehouse will provide for the delivery of materials, employees prefer not to have wait for their delivery. To complicate things further, even though the materials may be available at the larger warehouse, employees frequently request that the smaller warehouse order needed materials that are not in stock there. The net result is excessive inventory and inventory carrying costs!

While management is not sure of the total dollar amount that can be attributed to carrying excessive inventory, they are in agreement that it is likely very substantial. Therefore, a new and improved warehousing system is another top priority for the Maintenance Department.

Milestone No.1



MILESTONE 1 – SCOPE DEFINITION

Synopsis

The purpose of the preliminary investigation phase is threefold. First, it answers the question, "Is this project worth looking at?" To answer this question, this phase must define the scope of the project and the perceived problems, opportunities, or directives that triggered the project.

In this milestone you will prepare a ***Request for System Services***, which is the trigger for the Preliminary Investigation Phase. Also, you will use fact-finding techniques to extract and analyze information from an interview to determine project scope, level of management commitment, and project feasibility for the Equipment Check-Out System (ECS). With these facts and facts obtained from the Case Background, you will have the necessary information to complete the ***Problem Statement Matrix***.

Assignment

The Maintenance Department receives computing support from the GB Manufacturing Information Systems Services Department. You are to assume that you work as a systems analyst with this department.

You have been asked by Dan Stantz to analyze and design the Equipment Depot system to manage equipment check-in and check-out. In this assignment you first need to assist Dan Stantz in preparing a ***Request for Systems Services***. Secondly, by analyzing the interview transcripts, you will determine the feasibility of the project, level of management commitment, and project scope by using fact-finding techniques and the necessary communication skills to compose the ***Problem Statement Matrix***.

Mr. Stantz was gracious enough to allow us to record our interview session, and Exhibit 1.1 is a copy of the transcripts. Refer to the Case Background found in the Introduction

and to the interview transcript in Exhibit 1.1 for the information necessary to complete the following activities.

Submit

1. A completed ***Request for System Services*** form, as shown on ***page 170*** in your text, using information from the case background. Make assumptions where necessary.
2. A completed ***Problem Statement Matrix***, as shown on **page 171** using the interview with Dan Stantz in Exhibit 1.1 and the case background for the basis of your information. Make assumptions where necessary. Place yourself in the shoes of Mr. Stantz. Which problems do you believe have the highest visibility, and how should they be ranked? Try to determine the annual benefits. State assumptions and be prepared to justify your answers! Finally, what would be your proposed solution based on the facts you know now?

The following is a copy of the transcripts of an interview between Mr. Dan Stantz and you, a systems analyst with ISS department. This initial interview is conducted with a goal of obtaining facts about the problems and opportunities that have triggered the equipment check-out project request, plus other general information that could be used to prepare the *Problem Statement Matrix.*

Exhibit 1.1

Scene: *You have scheduled a meeting to discuss the equipment check-out project with Dan Stantz, Equipment Manager. The meeting is being held at 8:00 AM in Mr. Stantz's office.*

Dan: Good morning!

You: Morning.

Dan: I am glad we could finally get together. I'm sorry we had trouble finding a time we could both meet and discuss my project. It's been chaotic around here.

You: No problem. Hopefully this meeting won't take too much of your time.

Dan: I would like to have been able to provide more time to discuss the equipment check-out project. Unfortunately I will have to rush off to a 9:00 meeting with my boss Bill Venkman and his boss, Fred Murray (*Vice President of Physical Facilities*).

You: An hour should be more than enough time. The intent of this meeting was for me to simply get an overall understanding of the equipment check-out project.

Dan: Sounds good. Where should we begin?

You: Let's start with the minutes from your management retreat. Thanks for faxing a copy of that document to me after our phone call to set up this meeting. The minutes stated that your top priority is to improve the Equipment Depot and Warehouse operations.

Dan: That's correct, except *the number one priority is the Equipment Depot operation*. We would like to focus on tackling that area first.

You: Good. I wasn't too sure if you wanted this project to address both areas. Well then, why don't you tell me a little about the Equipment Depot . . . just exactly what is an Equipment Depot?

Dan: First of all, we have close to 200 maintenance employees. These employees are assigned to certain buildings or plants. Some of the employees are carpenters, electricians, plumbers, and other types of skilled workers. Each new employee is initially provided with a toolbox and a minimal number of tools. Those tools are theirs to keep. At the end of the year, we give them a token amount of money and if they need to replace those tools they can. Otherwise they can keep the money.

You: That sounds like a sweet deal.

Dan: We've found that if you give them ownership, they are more careful and responsible with the equipment. Anyhow, as I said, they are provided with the basic everyday tools such as hammers,

pliers, screwdrivers, and the like, depending on their skill. But many jobs they are asked to do require additional tools. That is where the Equipment Depot comes into the picture.

You: The Equipment Depot operates as a store where the employees go to buy additional equipment?

Dan: Not exactly. The employees don't buy the equipment. They check the equipment out from the Equipment Depot and return it when the job is completed.

You: That sounds like a busy operation for the Equipment Depot staff.

Dan: Oh it is! Of course, not every employee needs to go to the depot every day and for every job to get special equipment. Currently, I have three employees working for me in the Equipment Depot. They are able to handle things pretty well, although the beginning and ending of the work day can bring some pretty long lines of employees.

You: Can you tell me the names of your staff? I will likely need to talk to them at some point in time.

Dan: Sure. Janine Peck, Oscar Barrett, and S.P. Marsh each cover one shift. Those three and myself are responsible for the Equipment Depot and its $1 million inventory.

You: A million! That is a lot of hammers and screwdrivers.

Dan: Remember these aren't hammers and screwdrivers. Small tools are provided in the maintenance toolboxes. These are more expensive pieces of equipment. For example, air compressors, generators, dremmels, reciprocating saws, etc. – special items that either are needed only on occasions or are too expensive to lose!

You: I see. Tell me about the problems. Are the employees losing too many pieces of equipment?

Dan: *We estimate that more than $50,000 in equipment is lost, stolen, or damaged each year*.

You: Wow! So that's why this project is top priority. Do you have any idea what percent is lost, and what percent is stolen or damaged?

Dan: No, we don't. I've seen a couple of pieces of our equipment show up at flea markets, and we've caught a couple employees taking equipment home with them . . . but no, we can't say one way or the other for sure.

You: Tell me about your current system.

Dan: The current manual system has been in operation for over 20 years. The current system functioned well in the earlier years. However, as GB Manufacturing has grown in the number of buildings and maintenance employees, *the system has become inefficient and incapable of handling the growth*. I should point out that we no longer subcontract some of our work out to outside contractors.

You: I was about to ask about that.

Dan: Anyhow, along with that growth is the growth in the volume of equipment check-ins and check-outs and volume of equipment inventory.

You: So what are you envisioning for the new system ?

Dan: Obviously I would like *a new system that can handle this growth*. I am envisioning a system that will permit my Equipment Depot staff to be able to answer numerous inquiries related to the availability of equipment, the location of a specific piece of equipment, and an up-to-date account of what equipment employees should have in their possession.

You: I see. You want *a system that not only monitors check-in and check-out, but you also want the system to literally track the equipment.*

Dan: That's right. Heck, if an employee want to check out an air compressor and we don't have one in stock, I would like my staff to be able to locate one or more of our compressors. Find out which employees have the compressors and when they expect to be done with them. If needed, we can check it out to another employee and instruct that person to go to the job site to pick up the equipment. The last thing I want my people to do is purchase new equipment when they don't have to. That gets expensive.

You: Okay, thanks. I think I've got the picture. It is getting close to your next meeting and I think I have a pretty good understanding of this project. Are there any last things you would like to discuss about the project?

Dan: Yes there is one last thing. Maintenance has taken great pride in its training of employees and its emphasis on safety. I would like *the new system to place a check-out restriction on certain equipment. This restriction would not allow employees who do not possess a certain skill class to check out the equipment. It's for their safety*. For example, I don't want my carpenters checking out tools that only electricians should operate. Someone could get hurt if they don't know how to operate the equipment.

You: Thank you for your time. I had better let you get ready for your meeting. By the way, is there a deadline that you targeted for this project, and is there a budget?

Dan: I would like to have the new system tomorrow! Seriously, *I would like to have something in six months*. As for a budget, no we haven't established a budget. I was hoping that you could tell us what it would cost. I would then talk to my boss about getting funding.

You: Good enough. I will be getting back to you soon.