TSS
Field Technician Support System

Project Overview

TSS is a company that services safety hoods for companies that work with chemicals that give off dangerous vapors. The equipment is large and permanently installed so service needed to be done at the client site, and it was also very complicated so the technicians were carrying around many large binders full of technical information needed to service the machinery. Also, testing the machinery to ensure it was performing properly was a many-step process, and sometimes hundreds of measurements were being written on paper, then entered into a spreadsheet when the technician returned to the office.

This manual process was error prone in the transcribing of the measurements, as well as time consuming. It was often days before the client could receive the government required certificate ensuring their equipment was functioning properly. It was also expensive for the maintenance firm when a technician arrived onsite and did not have the proper testing procedures for a piece of machinery. Often the machinery owner would purchase a new piece and neglect to tell the service company, so the technician would arrive onsite unprepared for the new hardware.

Solution

We worked with their internal development team to create a system that would track all the testing information required for each make and model of machinery that could be tested. This application interfaced with the billing department for automated invoicing, as well as the service order scheduling department to allow our client to schedule their technicians appropriately to get the full value out of their time.

We also made this application run while disconnected to enable the technicians in the field to enter all the data they needed directly into the computer without the need to transcribe it later. By putting the testing specifications for every piece of equipment the company services on the tablet PC for the technician, they were also always prepared for any kind of new equipment that might be at a client site when they showed up.

Technical Details

The application was built using C# with a MS SQL Express database installed on each laptop the field service technicians took with them. These local databases would replicate to the main DB at the headquarters each morning before the technicians headed out to the field. Each evening they would return the office and re-synchronize. This also allowed the synchronization to take place over VPN if the field techs did not return to the office for some reason.

The application was also designed to use special identifiers that could be created by different laptops in the field without colliding when they were uploaded to the server.

Benefit

Decreased Expenses - By developing this system, we decreased our client's expenses by removing the need to re-enter test result data. We also reduced expenses by putting all test procedures on the tablet PC so the technicians did not have to make a second trip to the client site to service a new piece of equipment.

Increased Revenue - We increased revenue by providing a way of scheduling the technicians in the most efficient way, thereby increasing the number of billable hours.

Improved Cash Flow - We improved cash flow by directly interfacing the billing system with the scheduling system so that an invoice was immediately printed and emailed when the technician marked the site visit as complete.