

"A Time to Grow"

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ODOT Internship-Fall 2002

Acknowledgements:

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Introduction:

I graduated from YSU with an Associate's Degree in Computer Information Systems in August 2002. After trying unsuccessfully, for three months, to find a job, I decided to return to the university to work on my Bachelor's Degree and maybe get an internship to provide me with some work experience so that I would become more marketable. Through YSU I was able to obtain an internship in the IT (Information Technology) department of the Ohio Department of Transportation (ODOT). It is a paid internship and, after I successfully completed one semester, they asked me if I would like to do another one. This is actually my second semester with ODOT.

A Little About ODOT:

The Ohio Department of Transportation is the state agency that oversees anything having to do with transportation in the state of Ohio. They manage road and bridge construction, railroad crossings, ice and snow removal from state highways, traffic control, and handle safety issues. Their mission statement is:

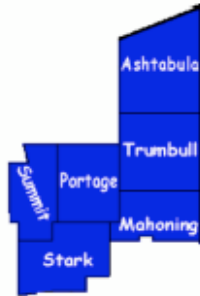
"Our mission is to provide a world-class transportation system that links Ohio to a global economy while preserving the state's unique character and enhancing its quality of life."

The following is the ODOT symbol:



You have probably seen many white vehicles with this symbol on the side. These are all the property of ODOT. The county buildings and outposts also carry this symbol.

The state is separated into twelve districts with the main office located in Columbus. Each district is in charge of several counties. I am working in the main office of District 4, which is located in Ravenna. Our counties include Mahoning, Trumbull, Portage, Summit, Stark, and Ashtabula.



Each county has its own main office and several outposts, which are usually big garages where equipment and supplies are stored. There are also job sites where computers are set up in trailers. Our department is in charge of the computers in all these buildings, including our own. Right now the state is just coming out of a purchasing freeze but the budget is still pretty tight. Our main goal is to keep our old computer equipment up and running until we are able to purchase new ones. There are approximately 270 computers in all.

ODOT IT College Intern Job Description:

The Information Technology Intern will be working in a network environment, setting up computers and trouble-shooting hardware and software problems. These networking systems involve using a LAN and a WAN. The intern initially will assist the Programmer Specialists and Analyst then eventually will be able to handle tasks independently. The information technology department is responsible for manning the District 4 help desk, maintaining the network and developing technological solutions for the other departments in the district building.

Overview

It is difficult to narrow down exactly what I learned to do at ODOT because our department does so many different things. I will first try to explain the overall responsibilities that our department has and the part that the interns play in them. Then I will pick a day where I was in the office all day and walk through the problems and solutions that I took part in. I will also choose a day that I was out of the office or "on the road" all day and explain what we did.

We are the Information Technology Department for the whole district. The individual counties do not have their own computer departments. It is our responsibility to make sure that everyone in the district has the right computer with the right software to do a specific job. This sometimes means taking the state van and driving as far away as Ashtabula. It is also our responsibility to make sure that our LAN is

working properly and all employees have good network connections. In addition, we do as many repairs on computers, printers and any other computer related hardware that we can.

There is a total of seven people in our department, including interns. Lori Best is our supervisor. She oversees everything in the department. She is the one who gets most of the calls and emails and determines which one of us will take care of them. There are three other full time employees; Brian Everett (Programmer/Specialist), Mike Putnam (Programmer/Analyst) and Jim Croyle (Programmer/Specialist). Our department has two other interns; Rob Lipowski (YSU) and George Khoury (Cleveland University).

We are set up, more or less, in a helpdesk environment. However, we have long-term solutions we work on when there is not an immediate problem at hand. These include projects such as the web page, efficiency of the network, and specific departmental technological solutions. Our requests come in by phone or email. Lori receives many of them and assigns them to us according to ability and workload. We can also get phone calls directly from the employees.

When I first started my internship, I followed the IT employees around and tried to learn as much as I could by watching and listening to them. As time went on, I was given small tasks to work on independently. Now I am at the point where I can take care of most problems on my own or, at least, get solutions started and then seek help. Much of the work we do is troubleshooting both hardware and software. It is very challenging most of the time, but the more experience you get the better equipped you become to handle the next situation.

A Typical Day at the Office



Rob and I arrive for work at 7:00 am. Mike is in the server room behind our office checking network connections. He asks



me to get a computer ready to take to a construction site. I know that I need a Dell Gx1 with either an internal or external modem. We have computers downstairs in a vault, so I take the dolly and bring one up to the office. There are not any external modems left so I grab an internal one to install. After I put in the modem I turn on the machine and boot it up to the network. We use the Norton Ghost Utility to download a "build " onto our computers. This build will install all the software, including the operating system, onto the computer. We have different "builds" categorized by machine type, how the machine will access the network (dial-up, direct, or DSL), and type of work it will be used for. All I need to do is choose the right "build" and Norton's Ghost Utility will do the rest. It usually takes about twenty minutes.



This is Brian trying to help me build a system. When I first started my internship at ODOT he was always telling me to move so he could figure out what I was doing wrong. This does not happen as much anymore.



In the meantime, Jim is working on the web page. He gets a call that a computer upstairs will not connect to the network. After troubleshooting for a while, Lori asks him to go to Trumbull County for a different problem, so he asks me to finish up the computer network connection problem for him. I go upstairs and reboot the computer to see if it picks up the network drives. It does not, so I look in the back at where the cable plugs into the network adapter. There is a green light and a yellow light, but the yellow light is flickering. My guess is that there may be something wrong with the Network Interface Card in the computer. The best way to test this is to get another computer and connect it and try it. I do that, but the other computer does not work either. This tells me that there is something wrong between the cable in the back of the computer and the switch in the server room. I look at the number on the port on the wall where the computer is connected. This will match up with a number on the patch panel in the server room downstairs. I can then trace the patch cable and see which port it is using to connect to the switch. The switch has lights which correlate with the ports. I can see that the light is off. Therefore, the connection is bad. Jim already used the "toner" to determine that the labeling was correct on the port upstairs.

The tone test set, or "toner" is a two-part piece of equipment that is used to trace a cable when you can not physically see the whole thing. You can't always see the middle of the cables because they run through the walls and the ceilings. The two pieces are about the size of a cell phone. The main piece has different types of connectors which can be plugged into a port. You turn it on and it emits a tone through the cable. You then take the other piece, which is an amplifier, and hold it close to the cable that you think is the other end. If it is, it will pick up the sound through the cable and make a high pitched noise.

Now that I know for sure which cables I need to test, I will use the "Wavetek LAN Cable Tester" to test them. This is also a two-part piece of equipment. It consists of a handset and a remote. You plug each end of the cable into one of the pieces and push the button. This will tell if the cable is good or not and if it has the correct wiring inside. I will start with the shorter cables first because they are a little easier to handle. First, I test the one that connects the computer to the port in the wall. It is good. Next, I go back down to the server room and test the cable in the patch panel. I get a bad reading here. I change this cable and try the computer again. Everything is working and the computer is now connecting to the network.

These are some of the typical things we do every day when we are at the District Office. However, every day is different because you never know what will stop working or who will need help. Many days we are asked to go take care of computers that are in the other county buildings or at construction sites in trailers.

A Typical Day on the Road

George and I are informed that we need to install some modems in a construction site in Ashtabula and set up a complete computer system in a Garrettsville construction office. We go downstairs to the vault where we store our equipment and we get two modems and everything we need for a complete construction set up. This includes the computer, a printer, a monitor, keyboard, mouse, another modem, power supplies for everything and cables to connect everything to the computer. We also need phone cables for the modem. We load all this into our van, which is also stocked with extra equipment if we need it.



The modem replacement at the Ashtabula construction site goes well but we find we are low on gas. We stop at the county building in Ashtabula to gas up. George takes a moment to pose by some of the ODOT equipment. George Khoury is also



an intern in our department. He already has a Bachelor's Degree in Computer Science and will be attending Cleveland University to start working on a Master's in business. He started working for ODOT at the end of May.

George and I arrive in Garrettsville and set up the computer. We have to add a modem and configure the computer to dial-up since this is a temporary site and it is not on the LAN. We also install a local printer.



Back at the office, I am sitting at the opposite side of the back room from the hubs and cables. This is where the servers are. This can be a typical day at ODOT. However, so many different situations occur that no two days are ever alike. There is so much to learn here because you are involved in so many different areas of computers. You work with a lot of hardware and do a lot of troubleshooting with both hardware and software.



Conclusion

The internship experience is a very important part of the education process. It is a chance to apply everything that is learned in the classroom to the workplace. It is the time that you can grow into an experienced, marketable professional. It is still part of your education, yet it is very different than the classroom where most of your time is spent studying from books and taking tests. In addition to applying your knowledge to the workplace, you must learn to work in your environment. You must learn to work together with other people. These are people that you do not get to choose to be with, but you will be spending much of your time with. My internship at ODOT has pulled everything I learned at YSU together for me. I was able to apply my knowledge under close supervision until I was ready to do things on my own. I was given responsibility, yet was supervised and taught while I was working. The most beneficial part of this experience was the confidence I gained from having the chance to prove that I could do this type of work. Because I was given this opportunity to work with wonderful people and do something I love, I have grown both personally and professionally.

Recommendations:

I would recommend an internship for anyone who is preparing for a career. There just isn't anything that compares to getting in there and doing it. By working, you are reinforcing everything you have learned in the classroom. It is also a comfortable way to start working while you are still in school. You are given responsibility, yet you are supervised and taught while you are working. It takes some of the pressure off.

ODOT is a great place to do an internship. They hire many college interns and they know what to expect from them. The employees know the interns are there to learn and they do everything they can to help them. The State of Ohio wants to put people to work and create jobs. This is one of their goals and they do everything they can to make it happen.