Tools and Techniques Used in Support Roles

A report by Joel Parkinson on the tool and techniques that are used in IT support rolls.

# Control Panel Software

The control panel software in most operating systems is an assortment of smaller applications that are all based on the premise of configuring and controlling the software and hardware within your computer. Examples of these tools may be the following:

* **Add or remove programs:**   
  This tool allows you to uninstall or fix programs that are installed on a client’s machine with the client of a button. This is useful at times when there is software causing an issue as you can simply remove said software using this tool.
* **Device Manager:**This is another tool in the control panel software that allows you to control the hardware within your computer. This can be everything from your motherboard, CPU, ram or HDD’s to network interface cards and USB devices. This tool can be used to troubleshoot problems with hardware within the computer itself. For example you can use this tool to ensure drivers for hardware are installed an even use it to troubleshoot driver issues (using the ability to roll back from a driver update to see if an update is causing a problem).
* **User Accounts:**The user account control system within windows allows you to control the users and permissions of said user on your computer from a centralized location. This tool can be useful in IT support rolls as it allows you to ensure that normal users don’t have access to things that can cause big problems when tampered with. This would in essence make it harder for problems to arise in future.

Overall the Control panel software used in windows operating systems is all geared towards allowing the user or technician to be able to configure and fix problems that arise as a result of software or hardware upon a computer device such as a laptop or personal desktop computer.

# Diagnostic Tools

Diagnostic tools are automated tools that allow a technician to better understand any errors or faults that occur on a computer system. Diagnostic tools normally assess hardware or software faults and report back with any errors or logs so the technician can then use the reported information to fix said errors and faults. An example of this may be the Windows Diagnostic Tools, these tools are designed to diagnose and even try fix some problems that occur on a computer running Microsoft Windows Operating systems. Not all diagnostic tools will try help fix problems however the main thing they all do is report back with any error codes and logs as already stated.

# Monitoring Tools

Monitoring tools are the tools that monitor hardware and software upon a computer in real time and feedback the information in a readable format to a technician. An example of this could be the task manager built into the windows operating system. This tool allows you to see everything that the computer is currently running, the resources it is using (CPU/RAM/HDD/Ethernet/Wi-Fi) as-well as any background services that are running too. This tool can be used by technicians to see what the computer is doing in real time as faults occur, for example they are able to see if a slow P.C fault is being caused by an application using too much resources or if it’s simply that the hardware can’t keep up with everything the client is doing.

# Remote Connections

Remote desktop is a windows feature that allows you to connect to a computer from anywhere in the world without the need for a VPN. In most cases it’s as simple as clicking a button to activate it on the computer your wish to connect into and then logging into said computer using the IP address of the computer and your standard user login privileges.   
Third Party Applications such as GoToMyPC & TeamViewer: These are a little bit of a combination of both VPN and Remote desktop, in most cases these application simply allow you to tunnel into your machine via use of a login and they take care of everything like the IP address and other security for you. The advantage of this tool is you are able to connect to someone’s P.C and fix problems upon them without having to go to the client’s home or business. This makes it incredibly easy and fast to fix problems that don’t require you to be physically there. The downside to this though is that it still doesn’t allow you to fix problems that require physical intervention however you can couple this working practice along with the clients helps themselves to complete fixes.

# Direct Questioning of the Client

Direct questioning of the client is where the technician that is dealing with a client issue will ask some pointed or directed questions to the user in an attempt to get further information on a set problem. In a lot of cases, the main problem that slows down the fixing of faults and problems is that the client simply does not give enough information to help the technician fix a problem, one of the most commonly said problems is “My P.C Stopped working”. While that is a fault that a technician would have to fix, there are also 100+ possibilities that could be the cause of the client’s issue. As such directed questions are what come to the rescue. By Asking directed questions, a technician can get information that will change the 100 possible faults into 10 and then possibly even into just one which then can be fixed. Simple questions like “Are there any noises coming from the P.C” and “Are there any errors codes being displayed” can make a technicians jobs thousands of times easier and the solutions thousands of times faster to find and accomplish.

# Fault Logs

Fault logs are what technicians use all the time when completing any jobs (fixes) they do. A fault log will often be a complete layout of the whole process which the technician goes through to both diagnose a fault, find a solution and fix said fault. These are used for a few reasons as listed below:

* **Future Reference:**   
  One of the best things about having fault logs from previous jobs is that you can reference them in the future for problems that match those you or you colleagues have already dealt with. You can reference previous logs for fixes you did previously and apply them as a fix to the current problem, this removes the need to have to research the solution as you already have it.
* **Event logs in-case of further problems when fixing:**In some situations you can end up causing a fault on a computer system without even realizing it while fixing the fault you originally started with. In these situations, having a fault log that houses everything you did on the client machine can become invaluable as you can use it to go through what you did on the client machine to pin point the thing you did or forgot to do to cause a new fault.
* **Make sure you don’t miss anything:**When working on a fault you can sometimes miss steps that need to be done at which point may cause more problems for you. What having a fault log allows you to do is also keep check on everything you have done up to the point you’re at now so you can be sure you won’t miss anything out.

# Knowledge Base.

A knowledge base can be broken down into many segments however the big two segments are normally the following:

## Own Knowledge

As a tech support worker you are going to have had training and are going to have knowledge regarding basic and even complex faults that can occur and how to fix them, you may also have experience fixing problems and knowledge from that too. This kind of resource is incredibly invaluable as it’s often one of the most fastest and efficient to take advantage of. It requires no outside help and allows you to fix the problem as quickly as you possible can. The one downside however is memory isn’t always perfect and sometimes you may forget certain steps and cause more problems. This form of resource should only be used when you have the upmost confidence that you solution is the correct one for the fault you are dealing with.

## Colleagues

Colleagues are often a source of wisdom and knowledge that literally give you a second brain to fix a problem. The main problem though is that they aren’t always available and sometimes by pulling them to help you, you stop them doing their job. However if they are available and not busy then the knowledge they give you can be invaluable as colleagues could have fixed the very same problem you are having before and may know exactly how to fix it again for you. This is again incredibly fast and efficient as you don’t have to spend much time at all doing research on a problem. Also as the college is helping you, you’re able to learn from them so that your knowledge base grows as a whole.

Tools Used

A comparison of the tools I used in completing the faults as displayed in my Logbooks.

# Anti-Static Wristband

The Anti-static wristband was used when fixing all the faults I had to deal with because for each fault the diagnostic process involved some form of checking the computer hardware within the client’s computer. This made the anti-static wristband a must need tool as it ensured I would not cause further damage to any components within the system. The Anti-Static Wristband works by dissipating the static electricity your body naturally generates into a grounded object such as a radiator or even a chair leg (Providing it is metal). If I was not to have used the Anti-static wristband then I would have put the hardware components of the client’s P.C in danger, danger which I could (and did) easily prevent.

# A Standard Toolkit

The standard toolkit was a tool I didn’t have to use however I did have available to me at all times when I was dealing with the faults. The reason I had the standard toolkit available to me at all times was mainly for the diagnosis process and for any solution that may have evolved hardware related fixes. The standard toolkit houses all the tools I would need to correct any hardware faults with the client’s computer and while it wasn’t used when I was completing the fixes on the client’s computer, it is a good thing to have nearby as a “just in case” measure. Many client P.C’s will be different with some needing tools to access the inside of the case (Possibly a screwdriver) as such the standard toolkit is a must have when dealing with faults.

# Windows XP Boot Disk

The windows XP boot disk was a tool I used twice when fixing faults. The reason this tool is so useful is because it holds everything the windows XP operating system needs to function and also hold several diagnosis tools upon it that can run independently of the operating system. This is especially useful is situations like the NTLDR fault as I was unable to access the computer operating system to complete any diagnosis on the hard drives or the system as a whole. Using the Windows XP boot disk, I was able to load up the independent diagnosis tools which are on it and use those to fix the fault I had to deal with. Another reason this tool was so useful when fixing the faults is that it houses files that may have become corrupt or simply didn’t install correctly during the original setup of the operating system. This was the case with a fault where I needed to install some device drivers for a network interface card, using the windows XP boot disk I was able to re-install the drivers needed to run the NIC and the fault was fixed. It would have been infinitely more troublesome and time consuming without the boot disk.