The IT Support Handbook

A How-To Guide to Providing Effective Help and Support to IT Users

Mike Halsey

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For my father, James Halsey, who taught me the value of hard work and dedication, and who first introduced me to computers. You set me on the road to my career as an author. I will always be proud of you, and grateful for everything you did.

For Chris Rhodes MVP, MCT. He made everybody feel welcome, valued, and at ease. He will always be missed and never forgotten.

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About the Author

Mike Halsey is a Microsoft MVP (Most Valuable Professional) awardee, since 2011, and technical expert. As the author of Windows 7, 8, and 10 troubleshooting books and associated videos, he is well versed in the problems and issues faced by PC users, IT pros, and system administrators when administering and maintaining all aspects of a PC ecosystem. Mike is a teacher and prolific author who uses his training to educate people about complex subjects in simple and straightforward ways.

Originally from the United Kingdom, Mike now lives a simpler and less complicated life in the South of France with his two rescue collies, Evan and Robbie.

About the Technical Reviewer

Massimo Nardone has more than 24 years of experiences in Security, Web/Mobile development, Cloud, and IT Architecture. His true IT passions are Security and Android.

He has been programming and teaching how to program with Android, Perl, PHP, Java, VB, Python, C/C++, and MySQL for more than 20 years.

He holds a Master of Science in Computing Science from the University of Salerno, Italy.

He has worked as a Project Manager, Software Engineer, Research Engineer, Chief Security Architect, Information Security Manager, PCI/SCADA Auditor, and Senior Lead IT Security/Cloud/SCADA Architect for many years.

His technical skills include Security, Android, Cloud, Java, MySQL, Drupal, Cobol, Perl, Web and Mobile development, MongoDB, D3, Joomla, Couchbase, C/C++, WebGL, Python, Pro Rails, Django CMS, Jekyll, Scratch, and so on.

He worked as visiting lecturer and supervisor for exercises at the Networking Laboratory of the Helsinki University of Technology (Aalto University). He holds four international patents (PKI, SIP, SAML, and Proxy areas).

He currently works as Chief Information Security Officer (CISO) for Cargotec Oyj, and he is member of ISACA Finland Chapter Board.

Massimo has been reviewing more than 45 IT books for different publishing companies, and he is the coauthor of *Pro Android Games* (Apress, 2015), *Pro JPA 2 in Java EE 8* (Apress 2018), and *Beginning EJB in Java EE 8* (Apress, 2018).

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PART I

IT Support Fundamentals

CHAPTER 1

An Introduction to IT Support

There's often an interesting story as how people got started with a career in IT support. In my case I was a tinkerer; I wanted to know what was inside the case and how things were made. This meant that whenever I had access to a computer, be it my own Sinclair ZX81, Spectrum or QL, or the Apple II or IBM PC that my father brought home from work, I would pull it apart to see what it was made of.

It's possible really that I could have been an engineer though I didn't have much of an understanding of semiconductors or electrical resistance. Studying electronics for a while when I was 16 didn't really help either as I was far more interested in programming and the user experience.

Inevitably however this led me to build an aptitude with computers which my parents spotted early on and encouraged. From the age of 11, I was never very far from a computer, even having one as my constant travel companion for most of my late teens and right through my 20s in the form of the Psion Organisers and Series 3 and Series 5 PDAs. Today I own the reborn Psion, the Gemini, for which I demonstrated my love for the form factor by becoming the person who wrote the official user guide.

When you have such constant and close experience using computers, it's easy to build a relationship with them where you understand how they function, what makes them operate in different ways, and what's hidden away beneath the surface.

This of course is where the story gets interesting and perhaps a little funny. I still tinkered in my 20s, only now I was tinkering with software and operating systems. Playing with .ini files in the early versions of Windows, or boot partitions and registry entries. It wasn't long before I would regularly begin to break my PC. This wasn't a problem at the time as I wasn't using it for work, or anything critical, and had the time to teach myself how to diagnose what I'd done, and ultimately how to fix things.

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When I discovered a tweak or a hack that was particularly cool though I wanted to share it, and so would implement it on the computers of my friends and family; they needed me to provide tech support and because they didn't understand the mechanics of what I was doing rarely questioned things.

You can probably tell where this led, and pretty soon I was not just breaking my own computer but theirs as well. This was slightly more of a problem as they'd be annoyed. I would have to fix things, quickly, efficiently, and effectively, and it's amazing how quickly you can learn how to repair problems when somebody's breathing down your neck waiting to get access to their email again.

It was at that point that I began to do IT support for a living, first independently helping individuals with PC problems in their homes, and then for Fujitsu Siemens as it was then in second-line support in a call center. It was my time providing support for major banks, supermarkets, research firms, and retail giants that taught me just how some people could mistreat their PCs, hardware and software, and cause endless problems.

One particular story that always raises a laugh with me is a colleague who took a call from a manager who had decided that his keyboard was dirty and needed cleaning. He'd filled his basin with hot, soapy water and given the keys a good scrub. Recognizing though that it was an electrical equipment, he'd hung it upside down overnight to give it time to dry.

The following day his computer wouldn't work, so he called the IT helpdesk and explained what he'd done. On checking the asset tag information the manager had provided, my colleague had to inform him that the reason his computer wouldn't work was because the keyboard he'd washed was built into the rest of his laptop.

My colleague was as you would expect a consummate professional, and only laughed his head off and told the rest of us what had happened, after he'd arranged for the laptop to be replaced (there wasn't a lot of point in servicing it), ended the call and written up his notes.

There are definite protocols to follow when providing IT support, and openly laughing at the customer rarely sets the right tone, no matter how funny or idiotic the situation they found themselves in might be. We've all heard the story of the person who couldn't get their computer to work, but who couldn't see around the back of the unit to check the power and monitor cables as the lights were off because of a power cut. We've also all heard the story of the server technician who was complaining his keyboard had packed up, only to eventually find another keyboard sitting underneath it that worked perfectly.

One of my favourite stories doesn't involve IT support at all, but rather a PC retail outlet, a large chain, which a friend was visiting one sleepy Sunday with his father. He called me to say that the sales guy was following them around the shop floor, and asked what he should do; on that occasion I have to admit I did laugh.

The Fundamentals of IT Support

There are many roles in which you might find yourself providing IT support, from first-, second-, or third-line technical support, on-site or traveling engineer, systems administrator or the manager of a team of administrators, the owner of a small store or business that repairs PCs for customers, or someone with an aptitude for computers who repairs problems for friends and family.

All IT support however stems from three fundamental questions. What, when, and how? What is it that's changed or that happened just before the problem began? When did the problem begin? How did the problem begin?

This last question is actually the most important as the core desire of anybody providing IT support is to reduce their own workload and stop other people from being a numpty.[1] If you can configure their computer in a way as to prevent that problem from recurring, or help the user understand what they did so as to ensure they don't do it again, then that's less time you'll spend slapping your hand against your face, and more time you can devote to playing World of Warcraft. So let's look in more detail at these three questions, as they're going to be something I'll mention a lot.

What?

The question "What?" is the most basic principle of IT support, and it's utterly impossible to provide any kind of support without it being asked. It's slightly more complex however than "What the hell have you done now?" or "What could possibly have convinced you that was a good idea?"

I always start with the question "What's changed?" as nothing ever goes wrong with computers unless something has changed. They always work out of the box which is why it's often said that a computer that's left inside the box, and never used, will never

[1]Numpty [ˈnəm(p)tē]: *Noun* (British informal), a stupid or ineffectual person who has little idea what they're doing or talking about.

develop a problem. If you can understand what it is that's changed, or that has happened recently, then you can often get to the root of the problem very quickly.

Let's look at some scenarios, because as you might have already guessed by now, I'm quite fond of those.

Scenario A A person is complaining they can no longer print to their printer. On asking the question what's changed, it transpires that the printer developed a fault and was swapped for a new one a couple of days before. Externally, and to the untrained and, let's face it, uninterested eye of the office worker, the new printer is completely identical to the old one, except that the new printer has an added "S" on the end of the model number, a tiny change that can have all sorts of ramifications for drivers, default printer setup, and tray selections.

Scenario B A worker cannot get access to cloud storage so they can open documents they need for a project. On asking the question "What's changed?" you might discover that all the PCs in the office installed some Windows Update the evening before as people left for the day and that three of this individual's colleagues have retired to the kitchen for a cup of tea as they can't access the remote files either.

Scenario C A remote worker can't get access to the company network to upload their sales data, but hasn't contacted their workplace directly as this is what IT support is for. A quick call to the workplace, or a look online at the ISP's (Internet Service Provider) web site, reveals that somebody in a digger has accidentally severed the main broadband fiber connection while working on the construction site up the road.

If you understand what it is that has changed, you can narrow down the number of possible causes for the problem. This is what I like to call the Sherlock Holmes method, and indeed the "world's greatest detective" probably would have been very good at IT support.

Sherlock Holmes, or rather the author Arthur Conan Doyle, stated that "Once you eliminate the impossible, whatever remains, no matter how improbable, must be the truth." Turning IT support into a process of elimination is essential as there are just so many things that can go wrong. We'll look at these in more detail later in this chapter.

When?

In order to understand what a problem is, and the possible knock on effects and ramifications it can have, you need to know when it began. It might be that the problem occurred as people arrived for work that morning, as in scenario B. Alternatively it could be that the problem has existed, on and off, for several weeks. Julie first encountered it in accounts, and Dave in logistics had it too a few days later. It's been on the caller's PC now for some time, but because they don't use the app/feature/hardware on which there is a problem, they've not thought too much about it until now.

Tracing problems back that began some time ago can cause problems, and this is where you can use features on PCs such as the Event Viewer and Reliability Monitor, both of which we'll look at in Chapter 14. You might discover however that the problem occurred just after all the desks were moved after the annual spring clean, or around the same time as a massive thunderstorm. All of this is useful information that helps you narrow down the possible causes.

How?

This leads us onto "How?" the problem occurred, but even this is more complex than it might at first appear. The problem occurred when I turned off my PC. Okay, but how did you turn it off? Did you use shutdown from the Start Menu, press and hold the power button for 4 seconds, or just switch it off at the mains socket?

In another example someone might have a problem with a tablet that happened because a software update was installed. In fact on this occasion it could be pure coincidence that the software update occurred around the same time as the problem began, and the actual cause of the problem is a change to security policies requiring a certificate import on their device they didn't read the email for because they've just returned from vacation.

People don't want to know technical things, they see computers as consumer electronic devices in much the same way they view their TV or microwave. This isn't helped by the fact that their TV might occasionally get a software update, or the PC is a tablet with an embedded OS (operating system) and apps that just come from a store.

This means that asking the question "How?" might just return a puzzled look and the response "You're the IT person, you tell me." On these occasions asking how probably won't get you very far, but you can usually ascertain the information you need from having asked what is it that has changed.