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and everything voice, data and video — moving or still

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23rd Updated and Expanded Edition
Harry Newton

NEWTON'S TELECOM DICTIONARY

23rd Edition

Harry Newton



New York

NEWTON'S TELECOM DICTIONARY

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Steven Schoen, Contributing Editor
Gail Saari, Layout and Production Artist
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Stay In Touch

For suggestions, corrections, updates, special offers, please send an email to
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I promise you I won't give your name to anybody. Nobody. Promise.

Harry Newton

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NEWTON'S TELECOM DICTIONARY

23rd Edition

Harry Newton



New York

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I promise you I won't give your name to anybody. Nobody. Promise.

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Dedication to a Great Visionary

LeRoy T. Carlson

LeRoy T. Carlson founded, and is today Chairman Emeritus of Telephone and Data Systems, Inc. (TDS), one of the largest independent telephone companies in America still controlled by its founding family. TDS serves seven million happy customers in 36 states with 11,800 enthusiastic employees and enjoys over \$4 billion in annual revenues.

Carlson, the son of Swedish immigrants, grew up on Chicago's South Side. He helped support his family during the Great Depression with a door-to-door produce business he created. He funded his college and graduate school studies by selling magazine subscriptions, used furniture, and laundry services to his classmates. Carlson served in the U.S. Navy, S.C., Lt. Jr. Gr. and the General Motors Overseas Corp. during World War II.

He and his wife, Margaret, have four children and ten grandchildren. Carlson, now 90, comes to work every day. He is among the oldest-living and hardest-working of the original telephone industry pioneers. I salute his great sense of humor and his zest for life. I am proud to dedicate this 23rd edition of my dictionary to LeRoy T. Carlson, a great American.

March, 2007

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WHY I WRITE THIS DICTIONARY

How You Can Help

by Harry Newton

This 23rd edition is slightly smaller in pages than last year's. That's not because there are fewer definitions. In fact, there are many more. But a genius called Gail Saari, a great artist, figured some creative ways to squeeze more words on each page without affecting readability. One of her little tricks was to remove one blank line at the bottom of the page – between the text and the page number. Gail loves doing this dictionary: she finds it endlessly amusing and incredibly useful. Thank you Gail.

This dictionary is a labor of love. It began on a rainy weekend many eons ago, I said to my wife, "What this industry really needs is a dictionary. I'll write one this weekend." That was nearly 25 years ago. I'm still writing this dictionary. Every day I add another definition, or two, or three.

I wrote this dictionary to teach myself my twin loves – telecom and technology. I find that writing a definition gets it clear in my brain. Writing helps me understand the complexities.

Writing takes enormous work. Anyone can write in techno mumbo-jumbo. There's oodles of it out there. I write this dictionary in non-technical business language. That means distilling the geek-speak and the techno mumbo-jumbo into English normal people (like me) can understand. People use geek-speak to make themselves feel important. That annoys me. I believe (perhaps naively) that anyone in business – whether engineer or not – should be able to understand complex technical terms. I'm not an engineer. That's good and bad. It takes me longer, but I do get it eventually into English.

This dictionary is different from any other. Some of my definitions are short. Some are long – very long. They can be mini-essays. My objective is to explain what the technology means, what it does, how you use it, what its benefits are and what the pitfalls of using it are.

I also have this crazy section – The Best Money Saving Tips. I've collected the best ones over 25 years. I used to publish a telecom magazine called Teleconnect. The most popular section was Money Savings Tips. Here are the best. You'll easily pay off the cost of this dictionary by using only one of the tips.

Sadly, I'm not all knowing. I need your help. Sometimes my definitions are unclear, old, wrong, don't make sense or aren't up to date. Please send me an email. I'm good about responding. But, I'm totally obsessed about making this the best dictionary ever written.

Please help. Send me an email.

Harry Newton
New York, NY
Harry@HarryNewton.com

THE HOTTEST TELECOM OPPORTUNITIES

“I Love Telecom. Where Should I Work?”

By Harry Newton

Here are some booming telecommunications areas:

Broadband. Broadband. Broadband. The world is going broadband. Will it be cable TV, DSL, Wi-Fi, EvDo, FiOS or WiMax, satellite, or long-range wireless? Depends. In the U.S. cable TV seems to be winning, though I'm impressed with Verizon's portable Broadband Access service and its new fiber-based FiOS. Overseas, the phone company's DSL is working magic – largely by providing fast bandwidth (much faster than the U.S.) and low prices. Long-range wireless (such as WiMAX) could become a contender if prices drop and providers get better funded. Fact is, broadband Internet is our industry's fastest-growing, most popular new service. Broadband Internet is to economic growth today what the interstate highway system was in the 1950s. It's the engine of economic growth.

VoIP. Voice over the Internet. I have it. I use it everyday. Slowly, they're working the bugs out of it. It'll never work as well as normal circuit switched calling – unless you control all aspects of it (e.g. on a private network). This means you'll never get perfect quality on the Internet. But VoIP will get pretty close. And the price is right – basically free for each additional call. Today's VoIP quality is about as good as decent cell phone service, which means you get dropped and volume ebbs and flows. Adding features to VoIP is where the action is going to be – like voice mail you can read on your BlackBerry.

Adding value to phone calls, voice mail and faxes. There are serious computer telephony services out there that do creative things. I like the services that accept your incoming faxes, convert them to PDFs and then attach them to an email to you. That's super because it means you can receive faxes wherever you are – in New York or Sydney, Australia. I like the services that receive your incoming voice mails and attach them to emails to you. There's even one service called Simulscribe that transcribes your voice mails into text messages and attaches a wave file of the message – in case you want to check they got it correctly. What's nice about this is you don't have to write down all the numbers in the voice mail. The computer has already done it for you. Saves huge time.

Home entertainment. It used to be standalone. A separate TV. A separate radio, etc. Now everything is connected by Ethernet cables and Wi-Fi wireless to a home entertainment server and through that to the Internet for downloading movies, songs, photos and programs for your TiVo, known now as a PVR (Personal Video Recorder). This is a super vision that is selling. Right now, putting the whole thing together is a little “hard” for the average consumer. But it is getting easier. More and more of my friends are putting complex home entertainment networks into their home. I'm getting one also. I have a wired Ethernet and wireless network running around the house. I have TiVo recording TV shows, which I can play back on any of three TV sets. We have a sound system blasting into many places. Often I carry my central collection of songs on my iPod to the appropriate input connection. Today, my “switching” between devices is manual. But many of my friends have a whole low voltage network of switches. There's huge money in this business.

Better TV. DVDs are better TV. They look and sound better. High definition TV (HDTV) is even better. Once you've seen it, you won't want to go back to normal broadcast or analog cable TV. Sadly, it's hard to get HDTV in most parts of the world. But it's coming. The “playback” devices – plasma, LCD, DLP, projection TV – are getting by the day.

The Internet as a giant shopping mall. Many of us developed great skills in running telephone call centers. Now it's time to transfer those skills to running great web sites and providing great service to Internet customers. Too many web commerce designers, especially those coming out of IT (Information Technology), make their web sites according to the “service” they get out of computer vendors – like endlessly waiting for answers to questions, like little real information and like 48-hour answers to customer emails. In short, most web sites that peddle stuff could sell a lot more and be a lot more profitable if their web sites were designed to include customer service (and people) not replace them. I wrote a piece on this subject at the end of this introduction, called “Why is it so hard to buy?”

Remote healthcare. Millions of people with chronic health problems such as diabetes, heart, kidney or circulatory problems will be able to have their conditions automatically monitored, and their problems addressed, as they go about their daily lives. This will save lives, reduce the cost health care and create huge opportunities for telecom service, equipment and maintenance.

Location based services. GPS (Global Positioning Service) combined with telecom. Triangulation with cell phones. America has six million heavy trucks. Every wasted hour costs big bucks. \$100 an hour is not uncommon. By combining location information with smart telecom networks and intel-

ligent software, you can seriously improve the productivity, and thus the profitability, of these trucks. Imagine what location services could do for agriculture. Cell service and GPS could tell the bulldozer precisely where to go, to tell the harvester where and how to harvest most efficiently. Ditto for the construction industry.

Security telecom. Whenever there's a disaster, the nation's cell phones and landlines collapse. There's huge money being spent on emergency communications systems. The battlefield for the war on "terrorism" is focused heavily on the Internet. That's where our enemies do their recruiting, their planning and their call to arms. Corporations likewise are spending fortunes to secure their networks, their web sites, their wireless communications and their databases.

Web services. As broadband Internet access becomes more common, more people will find it convenient to draw their computing power and services from remote sites, especially as those sites draw their material from multiple sites and combine it in unique and creative ways. See my definitions for Web 2.0 and Web 3.0.

Brazil, Russia, India and China - also called BRIC in the investing world. Every major North American company now has operations in China and/or India. Most companies are selling into China and India. A 50% per year growth is common. China is the world's fastest-growing large economy. By 2008, in time for the Olympics, China will fiber optic up its entire country, spending at least \$8 billion. The smallest village to the largest city will be served by the most advanced fiber optic telecommunications system in the world. And now India is exploding, especially with English-speaking call centers answering service phone calls from customers in the U.S. Neat useful business. If I were younger, I'd be working in China or India helping them with telecom.

Outsourcing. As services get outsourced to China, India and other places, the need for decent, reliable telecommunications and the management of it becomes paramount.

Web servers and web server farms are increasingly among the key assets of most major corporations. The care and protection of these servers and the telecom lines that feed them are hugely important jobs.

And finally the old standby, Refunds. Over 80% of the phone bills presented to corporations are wrong and usually wrong in the carriers' favor. This means that, if you know something about telecom bills, there's a handsome business in auditing corporate phone bills and securing hands refunds.

I wrote this book for those of us turned on to telecom, for those of us trying to keep up, for those of us new to this wonderful industry and for those of us who simply want a respite from life for a few moments.

Give my dictionary to your workmates, your employees, your users, your customers, your boss. Give it to your kids to let them understand what you do and why you're turned on. They'll understand why you, too, have no life.

Arthur Clarke once commented "Any sufficiently advanced technology is indistinguishable from magic." I hope the year 2007 brings lots of magic into your life. If you want to talk about Vision for our industry, send me an email or give me a call. Or ask me to give a talk at your user group.

Thank you.

Harry Newton →

Harry@HarryNewton.com
March, 2007

THE BEST MONEY SAVING TIPS

How to Save on Telecom, PCs, Internet, Airline, and Investing

Expanded for 2007

by Harry Newton

The most popular section in any magazine I published was a section called "Dollar Saving Tips." Every month I'd write tips that saved money or time, or both. One day, we decided to put the best tips into this dictionary. The logic? Perhaps we'll sell more dictionaries? If readers can save many times the cost of this dictionary, they'll feel they got the definitions for free. Weird way to sell a dictionary. That's the entire rationale for including these Dollar Savings Tips in this edition. I believe you'll save the price of this book several hundred-fold with these tips. Please do not underestimate how much work has gone into compiling this collection. It's 20+ years of work. As you read them, you'll notice eight themes:

1. Check. Check. Check. You can always find it cheaper, faster, better elsewhere, especially now we have the Internet, Google, Froogle, Kayak and others.

2. Ask. Propose. Negotiate. Everything is negotiable. End of story.

3. Don't believe the "experts." You can become an instant expert on the Internet, at your local library and by calling people on the phone, or all three.

4. You should argue with "brain surgeons." Pick a professional. Bargain with him. He'll do a good job, even if he agrees to do it for slightly less. That's why he's a professional.

5. Things are not worth what you paid for it. Just because it costs more doesn't mean it's worth more, though my wife often believes it is.

6. When God closes a door, She opens a window. This means there's always a better option or a better opportunity than the one you just lost. This is another way of saying, "always be positive." This applies to investments, houses, jobs, etc.

7. Never stop learning. The minute you do, the world will take you over. The world we live in is immensely complicated. The only weapon you have against it is to study.

8. Get everything you can in simple writing. Telecom salespersons often promise one thing. But their company's billing system can't bill it. You need simple paperwork to prove you're right.

Here are my best tips. They are in no particular order.

MOST PHONE BILLS ARE WRONG -- I

Over 80% of telecommunications bills contain errors, usually in the favor of the telecom service provider, local or long distance. Telecommunications rates and service contracts are complex and different deals are struck with different customers. What you have in writing is different to what I have in writing. The weakest part of any telecom carrier's operation is its billing system. Figure at least 20 years out of date. Different computer systems often exist within the same telecom company (think of all the mergers), and records of customer billing often conflict with the actual services. That's because most phone companies still have not integrated their billing and operations databases. In short, your corporate phone bills are wrong and definitely not in your favor.

MOST PHONE BILLS ARE WRONG -- II

In addition to incorrect rates on your telecom bills, you may also be billed equipment and for services such as outside lines that simply do not exist. You may have ordered a line that was never delivered, but billing was started and continues. Or you may continue to be billed for lines that you had in place, but then disconnected. If you can find these mistakes and document how far back the mistakes go, you can get a refund (plus interest) for all those years. Different rules apply to the refund process and may be dictated by State Public Utilities Commissions or the FCC. While you can probably get back some of the money yourself, professional telecommunications bill auditors are likely to get back more. Though you'll have to pay them a percentage of the refund, you are still likely to end up with more dollars in your pocket.

MOST PHONE BILLS ARE WRONG -- III

Audit all of your telecommunications at least once a year to be sure your billing is correct. You may consider using a professional telecommunications bill auditor. Auditors have the benefit of looking at many bills and contracts, so they know where to look for the errors. The best telecommunications bill auditor I know is Digby 4 Group, Inc., 212-883-1191, www.digby4.com. Jane Laino, president, is a dear friend.

GET INTEREST ON YOUR REFUND

If you're successful getting a refund from your local telephone company, be sure you get all the interest you're entitled to. Interest rates vary from state to state and can run as high as 18% per year (in New York.) Not all states pay interest (such as New Jersey). State regulations also vary in terms of how far back in time the refund will cover.

SENDING A FAX FROM YOUR PC

How to send faxes from your email. Now you're on broadband and no longer on dial-up, how do you send faxes from your PC? There are a bazillion services. But all want to charge a monthly fee. I found one which charges by usage. It's Fax1.com. I tested it. You can send attachments with graphics, charts and spreadsheets. It works fine. The price is right - 12 cents a page through the U.S., higher to other countries.

NEED A SPARE CHARGER?

Need a spare charger for your cell phone, your BlackBerry or your iPod? Next time you

check into a hotel, tell them you left your charger there on your last visit. They'll bring you a gigantic box of chargers and adapters their previous guests left. Take your pick. You'll be doing them a favor. Every day they accumulate more from forgetful guests.

HOW TO MAKE PDFs

PDF stands for portable document format. It's a universal computer file standard. This means if you send someone a PDF file, they should be able to view it on their computer – PC or Apple – and on some cell phones like BlackBerries and Treos. Most computers these days come with Adobe Reader, a simple free program to read PDF files. If you don't have one, go here – www.adobe.com/products/acrobat/readstep2.html. Some software allows you to save documents as PDFs. Microsoft's new Office 2007 has an available plug-in which lets you save documents as PDF. Look under www.microsoft.com/downloads. Search for "Save as PDF."

Making PDF documents is easy. There probably 500 programs. None do a perfect job. Which means they often mess up complex diagrams, shadowing, etc. The best way of making perfect PDF documents – i.e. ones that look exactly like the original – is to use an expensive program like QuarkXpress or Adobe InDesign and have it save your document in PDF format. Don't forget, there are many flavors of PDF. This dictionary goes to the printer in "high definition" PDF, which is very different to what you see every day.

Among the many PDF software makers I've tested, the best value for the money is a piece of software called PDF Printer Driver. You can download a trial version of the software, but it will put a small plug for itself on every page it converts to PDF. Or you can pay \$9.95 (which I did) and buy the real thing. To use it, you simply "print" your material to a file, to a place on your hard drive, not to a piece of paper. It couldn't be easier.

If you rarely need to convert a document to a PDF, there's another way. Email your document to PDFOnline.com. They'll convert it for you and return your new PDF document as an attachment to an email. If you need to convert paper with a signature or drawings to PDF, the easiest way is to use www.CallWave.com. You fax them your document. They return it as a PDF attached to an email.

There is one other issue with PDFs. If someone sends me a PDF file – say for a prospectus – I like being able to excerpt words, mark up the document with yellow highlighting or add a little note with questions to myself. For that I've been using Adobe Acrobat. Its only problem is that it's expensive – \$300. If you're curious you can get a 30-day free trial.

I've recently discovered something called Jaws PDF Editor, which seems to have everything Adobe Acrobat has and a little more, namely the ability to pull out, insert, delete and shuffle pages around. Best of all, it costs only \$43. There are undoubtedly many others, equally as good.

RECEIVING FAXES ON YOUR PC

How to receive faxes on your PC. The best service is www.Callwave.com. They give you a phone number. People send faxes to that number. A minute or two later you receive an email containing your fax and cover sheet. They send your fax in PDF format. Callwave charges \$3.95 a month to receive and send you an unlimited number of faxes each month. The faxes come in as a PDF attachment to an email.

BWARE OF KEYLOGGING SOFTWARE

Keylogging software, also called a keylogger, is a piece of software that sits on your PC and records every keystroke you type – including passwords and email messages. Then it secretly mails out copies to whoever planted the keylogger. Key logging software could be planted by your boss to see if you visit pornographic sites. It could also be installed when you surf a corrupt Web site and/or download applications such as file-sharing programs. Such keylogging software could easily be programmed to send its stolen information to remote databases offshore, where thieves sift through it for passwords, user names and account numbers. Essentially keylogging is automated identity theft via telecommunications. To protect yourself, don't download any stuff from web sites you're not familiar with. And run all the virus protection and adware removal software you can.

UPS WITH AUTOMATIC VOLTAGE REGULATION

When buying an Uninterruptible Power Supply, always buy one with Automatic Voltage Regulation (AVR). It can be the best friend your platform has. AVR eliminates the peaks and valleys of power surges and brown outs, providing you with clean, reliable power.

HOW TO BUY A FLAT SCREEN MONITOR

1. Only buy a digital monitor with DVI (digital video input).

2. 19" monitors are perfect. Especially several of them hooked to one computer.

3. Don't put yourself in a corner and circle screens around you. Better to have the screens in a straight line and angled slightly.

4. If you use a laptop, as I do, put your monitors on a 9 1/2 inch wooden stand. It should be 10 inches deep and at least 70 inches wide. That way you can put three 19" monitors up.

5. Look for monitors with adjustable stands.

6. I run three external 19" monitors with my laptop, including its own 14" screen. I do this with the aid of VillageTronics' PC card VBook and a Toshiba docking station. The VBook powers two of the monitors. The docking station powers the third and runs a DVI digital connection (as against a VGA analog connection – which is not as clear).

TIRED OF VOICE MAIL? TRY SIMULSCRIBE

Simulscribe converts your voicemail into emails and sends them directly to your inbox – which can be on your BlackBerry and/or your laptop. There are huge advantages to reading voice mail.

1. You don't have to keep checking your voice mail for the important one you're waiting for.

2. It's easier to read than listen. There are places you can't listen, but can read, like meetings.

3. They attach a wave recording of the voice mail. You can always listen to the message if you think the transcription screwed up.

4. It's great for traveling. Easier than calling the U.S. to find if you have a message, or not.

5. You can email a response to a voice mail.

6. You don't have to write down all the numbers and other information in your voice mail. As an email, it's there and indexable by your PC's search engine. You can find the information easily.

7. It's easier to scroll through emails than it is to scroll through voice mails. To get to an important voice mail, you have to listen to all your messages. Yuch.

My son, Michael, turned me onto Simulscribe. As a test, I called him this morning and left a voice mail with numbers. A minute later, my voice mail came in. The transcription from my weird accent to text was flawless. Simulscribe had even improved my miserable grammar. The message made more sense than the way I had spoken it. No kidding. Try Simulscribe for a week for free. Click here. www.simulscribe.com/products_index.php

TRAVEL WITH USB FLASH MEMORY STICK

I travel with a laptop. When I need something printed, I go to the local Staples or my hotel's business center. To give them my file, I save it to a small USB flash memory stick. I then hand the stick to the people at Staples who stick it into their computer and print my documents or photos. Saves huge time and is much more convenient than loading up printer drivers on my laptop and printing directly.

I'M GOING TO EUROPE. HOW DO I STAY IN TOUCH?

For voice in Europe:

Buy yourself a cheap unlocked GSM phone. Buy Nokia if you can. It's the biggest seller in Europe and thus easiest to get parts for. There are plenty on eBay. Buy cheap prepaid SIM cards in EACH country you visit and use them in only that country. When you visit another country, buy another prepaid wireless GSM card. Don't waste your money on global phones from the U.S. Their per minute charge will Put you into the poor house. Leave a message on your voice mail in the U.S. directing your callers to your European phone number.

When you need to call the U.S., do not use your cell phone. The cheapest way to call back to the U.S. is to use Skype and talk to a computer equipped with Skype in the U.S. That call will be free. You can also use Skype to call out of Skype to a normal phone number. That will cost you a couple of pennies a minute.

If you don't have a broadband connection or your laptop and hence you can't use Skype, go to one of the many web sites that sell prepaid calling cards to the U.S. – e.g. www.CallingCardsPlus.com. Before you use the card to dial from your hotel room, check with the hotel if they charge anything (or what they charge) for calling in essence a European toll-free 800 number.

For data and emails in Europe:

For quick messages, SMS works best. You can SMS (short message service) from a phone in the U.S. or from a PC. For your emails and surfing the Internet, the easiest is to find an Internet cafe – they're ubiquitous in Europe – and access your email via the Web. You can

also take your laptop to Europe. I do. Most Internet cafes will hook you up for a few dollars. Some have an RJ-45 Ethernet cable available specifically for laptops. Others you'll need to unplug such cable from one of their networked PCs and plug it into your laptop. Assure them that you know what you're doing. Hotels in Europe are iffy. Sometimes they claim to have Wi-Fi "throughout" the hotel. But it rarely works. You might find it works in the lobby. The best solution remains an Internet cafe – or your friends. Often they have broadband access at their homes and will let you use it. Be careful, some European DSL providers charge you by megabytes transmitted. Some even charge by time.

If you use dial-up in Europe, never leave your computer plugged in and powered on. My friend did that once for three days and got hit with a \$4,000 phone bill – many times the cost of his hotel bill.

"MY COMPUTER IS SLOWING"

As computer guru to all my friends, I hear "slowing computer" regularly. There are several solutions. These apply only if you're running Windows.

1. Add more memory. My laptops have three gigabytes of memory.
2. Back up all your data instantly. Best, back it up two places.
3. Run an up-to-date anti-virus program.
4. Run an anti-spyware program. Be careful not to erase needed cookies.
5. Delete all the files in the subfolders temp and prefetch.
6. Uninstall all software you're no longer using, especially any you recently installed.

You do this by going to Control Panel/Add or Remove Software. Be ruthless. If you haven't used the software in the past three months, remove it.

7. Run MSCONFIG and stop programs starting which you don't need on startup. By unchecking the software in MSCONFIG, you are not removing it. You can still use the software any time. What you are doing is removing the little programs that run constantly and put major burden on your PC – e.g. software that checks for updates, software that loads printers you're not using, software that reminds you to register your software, software that loads wireless drivers you're not using, etc.

8. Run Disk Defragmenter. Right click on My Computer. Right click on Drive C: and go to Tools.

9. When all this fails to speed up your computer (as it may), it's time to start from scratch. Format your hard disk. Install Windows and your various software programs from scratch. When you do, look skeptically at all your software. Ask yourself, "Do I really need this program?" If not, don't install it. The more software you install, the more your computer will struggle and eventually slow.

One BIG trick: When you first buy your computer and get it set up with the minimum number of programs you need, make a clone of its hard drive. And put the clone away. That way when your working hard drive starts slowing down, you can move all your working data over to the clone. And then clone the slow disk with the fast one.

The BIG key is not to load needless software. What I do is to have a second "play" machine. Anytime I see some software I might like, I load it up on my play machine and play with it on that machine. If I really, really like it, I load it up on my good machine. But 90% of the stuff that looks good based on its marketing hype turns out not to be very useful – what I might call "clutterware."

If all this fails, get a Mac. More and more IT professionals are.

HIGH FEE FUNDS

Research shows that mutual funds with high fees do not outperform those with low fees. Personally, I prefer index funds from Vanguard for painless investing – especially if you have a day job.

TRAVELING WITH A LAPTOP

First, slow speed dial-up – perish the thought:

You'll need an ISP provider to allow you to dial into the Internet. But you'll need one who serves the places you're going to. You're looking to make a local call. If you're forced to make a long distance, life can become expensive – especially if you're calling from a hotel. If you sweet-talk them, the hotel will allow you to use the ISP it uses. This way you typically only make a local call. I've used this technique in hotels in the the Austrian and Swiss alps.

Don't leave your laptop plugged into a hotel phone line. A friend left his laptop plugged in for his entire four day visit to France. He came back to a \$4,000 phone bill. All European hotels bill phone calls by time and distance. Some make more on phone calls than they do on renting the rooms. (At least that's my theory.)

Second, a broadband connection. There are two types: corded and wireless. For corded, you can plug directly into an Ethernet connection. You'll need to carry an RJ-45 male-to-male cord. For wireless (such as at Starbucks or at some airports), you'll need a Wi-Fi card. Most laptops these days come with one built-in. Typically you plug in, turn on and start your Internet Explorer. You'll then be taken to a page which asks for money or for your ID. Most places charge \$10 a day, which seems to me reasonable if you're going to get some serious work done. But there are many places with "free" Wi-Fi – i.e. someone's unprotected network. Turn on. Search. You'll be surprised. There are even handheld gadgets out there whose only job is to ferret out available networks. Your laptop can do the same job, but a little less conveniently. Recently, I was in a midtown Manhattan lawyer conference room. I asked the boss lawyer did he have wireless? He said he didn't. When I turned on my laptop, it detected six available Wi-Fi networks. I latched onto one, picked up and sent my email. Some "public" Wi-Fi have proxy servers or other gadgetry that won't let you send SMTP email – in which case it's easier to use your own SMTP server. Key: In Outlook you need to check the box that says "My outgoing server (SMTP) requires authentication" and the box that says "Log on using Secure Password Authentication (SPA)."

Verizon runs a service calls Broadband Access. It's not cheap – \$60 a month. And it's not as fast as DSL or a cable modem. But you can use it in your car, on trains, in offices that won't let you in on their LAN. And it works splendidly in most major cities around the U.S. and a heck of a lot of smaller cities. I'm very impressed with the service. It doesn't work in Europe. But I believe that Sprint or Cingular's portable broadband service might work in Europe.

WHAT IS RSS AND WHY IT'S USEFUL

RSS stands for Real Simple Syndication. You may also hear the term Web Feed, XML, RDF or ATOM. You use RSS to save you the time of revisiting web sites constantly. Basically you go to your favorite web sites, and subscribe to their RSS feed. From then on, you receive regular RSS "emails." Here's how:

1. Get a News Aggregator, also called a News Reader. Here are some.

<http://reader.google.com/>
<http://www.sharpreader.net/>
<http://www.pluck.com/>
<http://www.feedreader.com/>

2. Subscribe to Content

Go to your favorite web sites and look for an orange button that says RSS. Drag the orange RSS button into your News Reader. Drag the URL of the RSS feed into your News Reader.

3. That's it. Now you have personalized "E-Newspaper."

HOW TO GET BROADBAND ACCESS TO THE INTERNET

There are more ways than ever to get access to the Internet. In order of speed, the fastest is Verizon's FiOS fiber optic service. The second fastest is a cable modem service. The third fastest is a phone company's DSL service. The fourth fastest is the various cell phone providers 3G broadband access service. I prefer Verizon's service because of its broad geographic coverage. If you primarily use a laptop, and do some traveling, it makes sense to simply get one of the broadband access service and use it at home, at your office and traveling.

THE GEEK SQUAD IS A GOOD IDEA

Having trouble with your PC or laptop? Call The Geek Squad. They're expensive, but they usually do the job. They're part of Best Buy. Most Best Buy stores have members of the Geek Squad available for asking for questions. www.geeksquad.com/ or 1-800-433-5778. Apple has its "geniuses" who work in its stores. They will also answer questions and help you fix problems with your Apple equipment.

TIPS ON TRAVELING WITH A LAPTOP

Only stay at hotels with broadband Internet service – wired or wireless. Call in advance to make sure the service is working.

Carry one of the broadband access cards for your laptop. I use Verizon.

Check your POP3s and your SMTPs to make sure they work outside of your present broadband service. See the previous tip. Better yet, if you pay money to a hotel for broadband service, ask for its preferred SMTP server.

Take RJ45 and RJ11 extension cards.

Take a small triple adapter for AC power.

Take your cell phone charger and laptop power supplies.