

A Micro & Small Business Guide for

Nearly Free IT

How the Cloud Can Dramatically
Reduce Your Technology Costs

by

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Nearly Free IT

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Introduction: The End of Business As We Know It

“Opportunities multiply as they are seized.”
-Sun Tzu

There has been a significant change in the business world. Perhaps you've noticed? All over the world, everyone is suffering as the economic crisis continues. However, you should never forget that one person's crisis is another person's opportunity. There are countless, intrepid people out there who are taking a stand. Entrepreneurs all over the world are starting new businesses at an unprecedented rate. Everyone wants to get out of the Rat Race so they are reaching for financial freedom. Out of a global economic meltdown, entrepreneurs are seizing opportunities to make their dreams come true.

This book is a tool for entrepreneurs and small business owners. I will clue you in to truly remarkable online tools that can help you drastically reduce, and even eliminate your technology costs. But first you will need a new way of thinking about technology.

Read on and find out how!

The Old Business Model

I don't need to tell you how computers changed the world. Fewer people can do more work because of technology. We have machines to do the number

crunching and data storage work that we used to entrust to people. Instead of armies of bookkeepers and file clerks, we have computers humming along, getting work done.

But computers are expensive. Buying just one computer is within almost every business' budget whereas servers and other high-end equipment might be too expensive. That means that big business had all the advantage. The old way of doing business favored whoever had the most money to buy the most computers and hire the best talent. Small business had to work with much, much less.

With a change in how you think about technology, you can easily take advantage of some amazing new tools. The hard part is changing how you think. For example, I remember many years ago talking to someone who offered to sell me the southeastern United States as my territory for his amazing new product. I couldn't afford it, so I said no. I remember thinking the guy was crazy. Who ever heard of "long-distance calling cards"? It sounded so strange at the time. If I knew then what I know now, I would have found the money somehow. The moral is you should never ignore a new technology because it sounds strange or fantastic.

How the Cloud is Changing Business

This book is all about how the Cloud is changing business and how you can take advantage of it. For the first time in history, small business has access to the same tools and capabilities that were once reserved for only the biggest companies in world.

The Cloud levels the playing field and with the current crisis, you just might be able to carve out a sizeable chunk of the market for yourself.

Some of what I write in this book challenges conventional wisdom. I will challenge your understanding of how business works. I will show you the incredible possibilities the Cloud has created. I will stretch your belief and introduce you to ideas that you only thought could exist in science fiction.

The Cloud has created a new business model, a new paradigm. It has crept up slowly so many people have missed it. This book is all about how to use the Cloud and build your business into a powerhouse, all for very little money. Like the title says, Nearly Free Information Technology.

The Desktop Paradigm

We all know the Desktop Paradigm. This is where one user has access to a single computer which processes and stores all his or her information. This makes the individual machine incredibly important since everything of value is on that computer. The failure or loss of that one computer could be devastating.

It all started with Intel's x86 processors in 1978. Cheap microprocessors made possible the personal computer revolution. Now it is not uncommon for households to have more computers than people!

But this paradigm is unstable. In a highly mobile world, being chained to a single computer is no longer

acceptable. Small businesses are required to do more with less and to do it faster than ever before. That means we can no longer be chained to an office machine. We can no longer be slaves to the whims of a single computer which can fail at any moment.

You need to accept that the old paradigm is dying and a new one is being born. We are at the forefront of another change brought about by technology. The importance of the individual computer is over. Information is what truly matters! How you access, manipulate, examine and store your information is the change that is coming with the Cloud Paradigm.

What Is the Cloud?

Technically speaking, the Cloud is just another name for the Internet. Good computer technicians always diagram their networks. All the machines in their area of responsibility will be shown with detailed information and specifications. However, everything outside the technician's area of responsibility is shown on the diagram as a cloud. It is the computer geek equivalent of saying "Here Be Dragons." Just like the ancient mapmakers that drew sea monsters on unexplored areas of their maps, computer engineers include the unknown areas that connect to their networks. Since we don't care about the specifics of that other network, we draw a cloud.

With the advent of the Internet, suddenly we were all drawing clouds. Every computer network started connecting to the Internet and since we had no idea what equipment we connected to after we plugged in the cables, we just drew clouds. So, originally, the

cloud was just our way of saying "We know it exists, but we don't know anything else."

Now, the Cloud refers to the amazing new way of working with the Internet. The Cloud refers to a shift away from the individual importance of any computer. The computer is just a machine. It shouldn't matter if any one computer breaks, explodes or catches fire. It should not impact your business in any way.

Machines Don't Matter

I realize you think I am crazy. "That laptop is my life," is something I hear too often. They don't really mean the laptop, what matters is the information inside it! Now your information can reside in the Cloud, freeing you from equipment, costly computer techs, unreliable backups and all the nasty surprises that seem to come with computers.

Undeniably, there is a major shift in thinking required to trust another company with your information. Those unable to overcome this barrier will be trapped in the old paradigm with all the related costs. That is perfectly normal during a paradigm shift. Those who are able to adjust to the new paradigm will harness the new tools and blow away the competition. Those who can't will eventually wither and die.

Total reliance on a specific computer means you are paralyzed when that machine fails. And every computer fails at some point. So you buy a new computer. Then there's the tedious, time consuming process of moving everything from your old computer to the new one. How many hours have you wasted?

The Cloud eliminates all of these problems. Machines don't matter - information does. And your information is safe and secure on several remote computers at the same time when it's on the Cloud.

Embrace Change

Today, every business has to deliver more, for less. Time costs money, and money is getting tighter and tighter. You need to try to find alternative technologies that are cheaper, better and faster; but that don't get in the way of doing your job. The old paradigm required an enormous investment in computer equipment and labor. This made change very expensive.

Most people appreciate the benefits of change *if* it provides real business value. Change is always risky so you have to be cautious. The challenge is identifying the right changes that will help you improve performance, exploit efficiencies and build competitive advantage. Fortunately, the solutions exist in the Cloud.

Online there are a collection of tools and services that you can harness for a fraction of the price of the most expensive enterprise-level software. That means you can have at your fingertips the same tools used by the biggest companies in the world, for a price that any small business can afford. It means having access to state-of-the-art computer tools and engineers for a price you cannot ignore.

The companies that are hosting these Cloud services know that their entire business will collapse if there is



ever a security breach or data loss. Therefore, they hire the best computer engineers to manage their world-class computer centers and protect against all threats. You get the benefits of state-of-the-art equipment and brilliant engineers without the massive costs. That means you get the software tools, plus the security, backup and freedom without the cost. All it takes is that all important shift into the Cloud.

Suddenly natural disasters, fires, theft and equipment failures don't matter. Sure, it sucks when you have to buy a new laptop because the old one was destroyed. Isn't it infinitely better to know that your information is safe and secure? Suddenly, the computer is just a machine again.

And machines don't matter.

Focus on Function

Most Cloud services are not trying to create a bigger and more expensive product or service than the competition. Actually, current Internet success stories argue for the exact opposite. The most successful new Internet companies are not engaging in the traditional business cold war of feature escalation. How many features in Microsoft Word do you really use? How many of the buttons and commands in any software do you *really* use?

These Cloud companies are focusing on providing

fewer features to control their costs. They are also ensuring that the features they do offer are well executed and easy to understand. They are taking the time to distill the actual useful essence of the product into a viable, competitive tool. They focus on solving the real problems you have and leave the competition to choke on the complexities. Then they pass the savings on to you.

For example, in the book *Getting Real*, by 37signals, the developers of the amazing online project management service Basecamp, write how they chose Microsoft Project as their software "enemy." A good project management software should not be about charts and graphs, they argue, but about collaboration between team members set on completing the task at hand. The top-down dictatorial approach embodied by Microsoft Project was not the ideal way to operate in the new web-enabled world.

With the wealth of available tools and the power of direct outsourcing, entrepreneurs are proving to be capable competitors. With the amazing tools available online, it is now possible to do the impossible. The Cloud has opened the floodgates for new businesses to provide remarkable products at low costs and still exceed customer expectations. The old business models required enormous overhead to, hopefully, achieve these goals. The old ways are dead; it's time to embrace the Cloud Paradigm.

Cloud Advantages

Nearly Free

Many of the services available through the Cloud are built on a subscription basis with either a free introductory period or a free version. They offer basic functionality for free with advanced services reserved only for paying customers. For a start-up business, it is perfect since you can grow into the services you need over time.

Minimal Equipment

Much of the cost in technology is in equipment. With the Cloud you get to dump the majority of equipment and focus only on making money. Now all you need is a computer that gets you online. The Cloud does the rest.

Unlimited Mobility

You are no longer shackled to one machine. You are free to work anywhere as long as you can connect to the Internet. Under the old paradigm, your access to information was tied to the machine. Now, you can connect to your data anywhere, any time. That means you are able to go



where the money is and try to get as much of it as possible. You are free to move around the world and work comfortably without fear.

Before when you travelled for business, you brought a laptop computer. Everything was stored on the laptop. While you were on the trip if the laptop broke or was stolen, you were completely out of commission. Now, you can just buy a new device and reconnect to your information within minutes. Buying a new computer can be a hefty expense, but at least you can continue your business trip without looking like an idiot in front of your prospects and clients.

Or if you prefer, forget the laptop and get a data-enabled smart phone. An iPhone, Blackberry or other cell phone with Internet access will give you much of the same power to connect to your business information. While those tiny keyboards or styli can be a pain in the neck, once you get used to them you can work efficiently. Personally, I will stick to my laptop but the smart phone is a great tool to review and look up information quickly.

The Cloud Paradigm has allowed all business to be 100% mobile. We are no longer tied to a single location because all our stuff is there. The late, great comic philosopher George Carlin taught us about "stuff" and how we can become too tied to it. Now, your business stuff (e.g. data) can live in a virtual place that you can access from anywhere. Now that is true mobility.

Bottom Line Green

By reducing the total number of computers you are also reducing your electric bill. It's green and it's cost effective! Less equipment means you are emitting less CO2 and consuming fewer resources. You can honestly advertise that you are a Green Aware business.

Better Techs

Cloud companies hire the best computer engineers to manage their computer centers and protect against all threats. You get all the benefit of state-of-the-art systems run by genius computer technicians. In many cases, most Cloud companies are not even running their own computer centers! They are instead outsourcing the hardware management to utility computing providers, but there's more about that in Chapter 1.

The End of Platform Wars

Windows vs. Mac vs. Linux: the battle rages on, with other smaller players fighting for precious market share. Advertisements urging you to choose a side in the Platform Wars sway from the ridiculous to the insulting. Old consumer prejudices are still common too: Mac is for artists and Windows is for business.

It is all nonsense and it will all be ending soon.

A computer's platform is the operating system. Windows Vista, MacOS X, Ubuntu are just brand

names for the collection of computer programs that run the machine and provide you with digital services, like Internet accessibility. The operating system used to be the most important consideration when buying a computer. People wanted to buy a computer with a system they were familiar with that would also run all their favorite video games and work software. This is the old paradigm that gave birth to the industry giants like Microsoft and Apple.

The Cloud Paradigm is platform independent. More and more cloud users don't really care what platform they work on. The operating system doesn't matter when all I want is to connect to the Internet to access my business tools. Soon, we will only be interested in platforms that do not hog system resources. As more useful services become available online (and as more people start using them!) the tools provided by the operating system will be just more bloat that slows systems down.

How Can I Benefit?

They say that the miracle of the dancing bear is not how well it dances, but that it dances at all. That reminds me of some companies I've worked with over the years. They were bloated, ponderous business enterprises that were slow to react to change. The miracle is not how well they survived, but that they survived at all. In a slow economy, you cannot afford to let a ponderous business slow you further.

Fortunately there are five signs that can warn you if your business is in trouble:

1. Nasty Surprises

Frankly, as a business owner, I hate surprises because they are rarely good surprises. I can't remember the last time my accountant called me with good news. Do you understand what I mean? Do you get too many nasty surprises?



2. Breakdowns in communication

Do your subordinates understand your businesses *Big Picture*? Are they on board and pulling in the same direction? Are all the teams playing nicely and sharing information with one another? Have meetings ever turned into "Pass the Blame" sessions? Do people complain about a *lack of communication*?

3. Constant firefighting

Are you constantly fighting fires? Are you being pulled back and forth by the crisis of the hour? Have you ever had to abandon a crisis to fight a disaster only to be summoned to battle a catastrophe? Is there always something that demands your immediate attention, *right now* or the world will end?

4. Constant errors

Have you stopped to think what a bad decision can cost your business? Have you ever wondered if the data you use to make decisions is accurate? Do you have evidence of a time when bad data lead to a bad

decision? Can bad information cause you to make a career ending error?

5. Slow response times

Does it take forever to get answers to questions? Do you wait hours/days/weeks for reports? How long does it take a decision to be implemented? How does your company react to adversity? Does your business react smoothly, avoiding obstacles by adapting or does it grind to a halt?

If your business has any of these problems, you must change quickly!

The Cloud Paradigm is all about speed, agility, flexibility and mobility. If your business is one of these lumbering beasts you stand to benefit most from the Cloud Paradigm. Do whatever it takes to get your company lean and fast to compete. Those who cannot change will face corporate extinction.

How Does A Business Get Flexible?

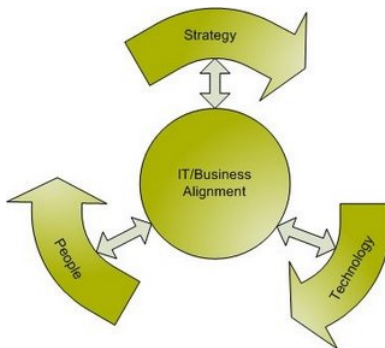
Business and technology alignment is the key. The biggest companies in the world do everything possible to align their technology and business goals. Because these monsters are so large, anything they can do to make themselves more flexible, more responsive to their customers, is mandatory. Every business can benefit from technology alignment.

Wikipedia states "...alignment can be defined as a state where technology supports, enables, and does not *constrain* (emphasis added) the company's current and evolving business strategies. It means that the IT function is in tune with the business thinking about competition, emerging threats and opportunities, and the business technology implications of each."ⁱ

In plain language, that means that technology should improve your business. It means that business goals come first, and then technology helps you achieve those goals. In too many small businesses, the technology dictates the work, not vice versa.

That means whoever handles your computers must understand your business goals. They must know The Big Picture. Where do you want your company at the end of the year? What about 2 years from now? How can you properly invest your money and time to

ensure you will achieve those goals? That is what alignment is all about.



Too often, technology budgets are spent only on new hardware and software. But without The Big Picture

understanding of long-term goals, your computer technician is unable to develop real, lasting solutions to address not just today's problems but the business needs of tomorrow.

But how do tech nerds talk to executive suits, and vice versa? How does a business owner communicate effectively with someone that speaks in Techno-Geek?

Well, the corporate giants solved this problem by inventing the position of the CIO. Chief Information Officer (CIO) is the person responsible for the computer systems. As information technology has become more important, the CIO has become a key contributor in formulating strategic goals.ⁱⁱ The big companies created a position that is really a translator from Business-Speak to Techno-Geek.

A good CIO must learn and understand every facet of the business. He or she needs to know how orders are entered into the computer system and how they are fulfilled. He needs to anticipate the likely points of failure. He needs to know the daily flow of work in order to identify potential bottlenecks or breakdowns. Sadly, most are just glorified computer techs that don't mind wearing suits.

Most CIO's solve every problem by throwing buckets of company money at it. The error in this approach is that the perceived problem may have deeper roots. Without a complete examination of the company and the day-to-day operations of the business, there is no way of knowing the full extents of any problem. So, while the CIO is happily throwing money at a superficial problem, the real, deep-rooted cause of the problem remains unresolved. Then, after all the money is spent and the "solution" is implemented, the problems don't go away, they simply change symptoms.

A real CIO does not just treat the symptoms but researches every level of the company and finds the real cause of the problem. Once the problem is identified, then an appropriate solution can be designed that will cure the real problem. "CIOs are increasingly being counted on to help business leaders...make their companies more agile and customer-centric. Contributing to this trend is trust in technology and the IT department to aggressively transform the business."ⁱⁱⁱ That is business / technology alignment. It's using information technology to solve your real business problems and to help run your business properly.

I realize that most small businesses can't hire a full time CIO. In these cases, you might call him The Computer Guy, or your Business Technology Coach. This person should be able to help you achieve alignment, but first she must take the time to understand your business and how you work. Alignment is about giving you the answers and information you need to make the right decisions to guide your company into the future. You set the strategy and your CIO develops the tactics. Alignment is all about teamwork and communication between you, the business owner, and your computer guy.

What's Ahead

Feel free to skip around to the sections that you think will benefit you most. For the executive summary of all the Nearly Free IT concepts in this book you can skip to Chapter 7. Many of you will probably just want to skip straight ahead to Chapter 6, that's where I

recommend Cloud services. However, since you paid for it, you should read it all.

Chapter 1 – Machines Don't Matter

This chapter is all about understanding the shift in mindset needed to fully benefit from the Cloud Paradigm. If you are still iffy on the idea of letting someone else manage your equipment and information, this is where you need to start.

Chapter 2 – Newer Isn't Better

Too many people suffer from Gadget Fever. This is the incredible desire to spend money on everything new, whether it is improved or not. If you have ever caught yourself saying "I need that!" then this chapter is especially for you.

Chapter 3 – Understanding Free

There's lots of free stuff out on the Internet. But there ain't no such thing as a free lunch! TANSTAAFL! So, how do we reconcile this difference? Once you understand hidden costs, you will be able to make much better purchasing decisions.

Chapter 4 – Build Firm Wisdom

Firm Wisdom is how you capture the accumulated knowledge of your business. It is not so much a service as it is a new philosophy for working. Firm Wisdom will dramatically reduce training costs and the time it takes new employees to become fully productive.

Chapter 5 – Ensuring Performance

The break and fix model of computer maintenance is too expensive! Learn how to control your repair costs with services that will easily fit most small business budgets. If computers are vital to your business, then you need to protect them.

Chapter 6 – The Art of Spending

This chapter has a partial listing of some phenomenal web-tools that you can start using today. These business tools will make your life dramatically easier and your business more productive. And most of the items I've listed are free!

Chapter 7 – The End

By this chapter you will be on your way to achieving Nearly Free IT. This is also a great refresher for the material I discussed in the proceeding chapters.

Let's get on with it!

Chapter One: Machines Don't Matter

“When the wind of change blows, some build walls,
others build windmills.”

-Anonymous

In order to understand the real power behind Nearly Free IT, there are some new concepts to learn. Like all new ideas, they can be somewhat difficult to grasp at first. However, once you understand them, a whole new world of possibilities will open up for you.

Computing Is a Utility

We are all familiar with public utilities. Electricity, water, sewer, telephone and natural gas are all metered services that we can connect to for a monthly fee. We don't need to own the pumps to get the water, we just need to be connected to the water pipes and pay our bill. We are charged only for what we consume. That's the key! We never have to buy more than we need, which makes it an ideal billing structure. It is economical and our behavior allows us to control our costs. If the electric bill was too high

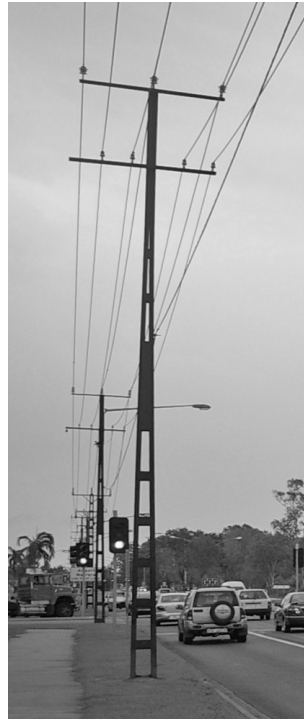


Photo by Bidgee

last month, start turning off lights and other appliances. Our behavior determines our expenses.

Under the old computing paradigm, if you wanted large computational or storage capacity, you had to spend a fortune in hardware and software systems to provide these services. That meant you needed a dedicated server room with proper climate control to preserve the equipment. You needed a full time computer technician to monitor, maintain and manage these expensive computers. These systems were cumbersome, expensive and required constant care and supervision.

But all that changed with high speed Internet connections. You don't need expensive equipment anymore. All you need is to identify your specific needs. You might need more storage space, spare computational capacity or even remote PC maintenance. Once your needs are identified, you simply find a vendor that provides these services for you. You get all the benefits from the services rendered and they get to leverage their investments in equipment and personnel to serve you better.

It's all about building an economy of scale. Think of it like a volume discount. When you buy more, you get a lower cost per unit. Because you are purchasing in bulk, you enjoy the benefits of scale. Cloud software companies are offering you the benefits of an economy of scale where you get all the benefits and share the cost with other users.

Before, you needed to spend a fortune equipping your business with technology. Now you can purchase the services you need (and just what you need) for a fixed

monthly fee. Like a public utility, computing has become a fixed-fee, managed service that saves you from spending unnecessarily. You don't have to spend money on equipment and employees that do not contribute directly to your bottom line. You can spend your precious money on sales, marketing and other areas that bring in profits.

Computing is now a utility. By thinking of it in that fashion you are free to focus on building your business and not on buying more computers. Whatever capability you need, you just rent for the time you need it. Just like a public utility.

Utility Computing Examples

The real benefit of utility computing comes from better control of your money. Traditional business data centers are almost always underutilized. Most business servers idle 85% of the time! This is because computer technicians are notorious for overbuying hardware in order to handle high workload peaks (such as the surge caused by holiday shopping), to plan for future growth and for unanticipated surges in demand. Utility computing allows you to only pay for the computing resources you need, when you need them.

Despite recent problems with outages, Amazon Web Services is an excellent example of utility computing. Using the power of Amazon.com's phenomenal technology infrastructure, customers can now lease computing power. Amazon's Elastic Compute Cloud (EC2) service permits customers to pay for computer resources by the hour and Simple Storage Service

(S3) lets customers pay based on storage capacity needed.

Another top quality service is Mozy Unlimited Backup which offers 2GB of totally free online backup or unlimited backup for \$4.95 per month! After you signup, you install a small program on your computer that gives you total control over which files you backup and how often. They offer a very intuitive and easy to use program that lets you select broad categories of files for storage. If you only backup your really important files then you should be fine with the 2GB free version.

The Downside of Cloud Computing

Right now you can buy computer resources the same way that you get water at home. You can pay for just what you need and easily scale up if you need more. You don't have to guess at your computer requirements (how many gigabytes are enough?) because you will get exactly what you need, when you need it. You will be billed every month instead of large, lump sum purchases. You won't have to spend a fortune on your computer systems because the Cloud Paradigm has made computing into a utility.



The downside of cloud computing is you can only access these services when you have Internet access. You must be sure there is an easy way for you to secure a copy of information if you should need it. You should also check and be sure that the

provider offers solid backup and redundancy. If you are in the medical, legal, banking or other regulated industry, you will want to be sure that your cloud software vendor is in full compliance.

In addition, for many Cloud services, you must have a high-speed Internet connection. There are also substantial concerns about privacy and how your information is protected. That just means as a Cloud user you need to do your homework and make sure that you are protected. Furthermore, because these files are stored on computers you don't control it is easier for Courts and civil litigants to subpoena your digital files.

Regardless of the potential downside, Cloud computing is an excellent way to control your technology costs. It allows you the freedom to work from anywhere there is an Internet-enabled computer. While there are some dangers, the benefits are substantial. Cloud computing should become part of your business especially if it sharpens your competitive edge.

What's the Difference?

Think of utility computing as the infrastructure and cloud computing as the services provided. Now that you are completely confused, let me break it down further.

Utility computing is about providing access to heavy duty machines. It is leased infrastructure you access to get computer processing power (pure number

crunching) or storage (hard drive space). Under a utility computing framework you are only getting access to the hardware capacity and nothing more. Because you are not using 100% of the equipment capacity, you will only pay for the fraction you use. This allows you to control your costs and avoid capital expenditures on hardware that will be obsolete in a few months.

Cloud computing is software sold as a service. You buy the software services you and your employees need from an online vendor. This vendor promises to provide you access to the software and your information for a set monthly fee. This allows you to control your costs and avoid capital expenditures on software that will be obsolete in a few years.

Cloud computing requires utility computing since it cannot exist without it. However, they are still different concepts. While I realize this is splitting hairs, it is important to understand the distinction. Purchasing cloud services gives you access to web-based software that offers you true business mobility. Purchasing utility computing services provides you with access to equipment capacity without having to buy the hardware. If it's easier for you to think of them as the same thing, that is perfectly fine with me.

Two Examples: Cloud Office Suites

The vast majority of computer files are text documents, spreadsheets and presentations. Practically every new computer comes with an office software suite that includes all three functions. This software is sometimes included with the computer so

you can have the tools you need out-of-the-box to get to work. However, the Cloud has birthed a new alternative that eliminates the cost of this software and stores your data online.

Of the numerous Cloud Office Suites available, I will only discuss two: Google Documents and Zoho.

Google Documents (<http://docs.google.com/>)

When Google first released this online service, it was clearly Google's first major attack against Microsoft. For many years, Microsoft maintained their dominance in the marketplace through their Windows operating systems and their near ubiquitous Microsoft Office Suite (Word, Excel, Powerpoint, Outlook, etc.). With the release of a totally free service that offered word processing, spreadsheets and presentation software it was very clear that Google was striking at the heart of Microsoft's profits.

At first, Google Documents was problematic and prone to errors. Several significant service outages impacted them negatively and caused reams of bad press. Google has worked diligently to correct those problems in the hopes of providing a solid and reliable product. The only real problem with Google Documents is the company's focus on developing new features for the product instead of fixing the remaining bugs. It is very frustrating to get errors that read "The server encountered an error. Please try again later."

Otherwise, Google Documents is a solid service that offers the features the majority of small businesses will ever need. It allows you to share your documents

in order to collaborate with other people. You can also create online forms to capture information from your web visitors. You can use Google Analytics to track the number of visitors your documents receive (so you can keep tabs on who's really working!). With Google Gears you can access your documents *without* an Internet connection and then synchronize your changes once you reconnect. And as I write this, Google is working on methods to integrate their search information into Google Documents to allow you access to more data than you can imagine.

AdventNet's Zoho (<http://www.zoho.com/>)

AdventNet, the publishers of a wide array of big business software products, has released Zoho to compete with Google Documents. Zoho offers an array of powerful tools for business. All your data resides on Zoho's computers so you are free to work from anywhere in the world. In addition to the usual office suite software, Zoho also offers online customer relationship management (CRM), project management, database creation and manipulation, online invoicing, web conferencing, business intelligence reporting tools, and human resources and recruitment tools.

Most of the Zoho services are 100% free and the rest only become pay services after a set level. For example, the Zoho CRM is free for up to 3 users. Afterwards, all future users cost \$12 each per month. When you consider that top quality CRM products cost tens of thousands of dollars (not including the equipment to run it and the computer tech to maintain it!), paying \$12 per month is incredibly reasonable.

The CRM service includes tools for sales and marketing, customer service, inventory management and slews of reports. You can also control who gets access to what information through Zoho's Role Based Security system. All in all, it is an excellent tool for your small business to help keep your customers happy and buying from you.

Zoho now boasts over 100,000 customers including General Electric! In a widely publicized move in September 2008, GE switched their 400,000 users from Google Documents to Zoho because of concerns over Google's reliability.

Are You Getting the Idea?

I think you are starting to see the advantages of the Cloud. Every small business needs tools that are inexpensive and can grow with the business. The beauty is that most Cloud services offer a free version so you can check them out for yourself. Poke around and kick the tires on these services until you find the ones that fit you best. I think you will be pleasantly surprised at how easy most of these services are compared to traditional out-of-the-box software.

The Decline & Fall of the Computer

Machines don't matter! The time when each computer was important is now over and the sooner you accept that the easier your life will become. All that matters is access to your important information and to keep your business running. Once you adapt to the Cloud

Paradigm you will free yourself to work from anywhere.

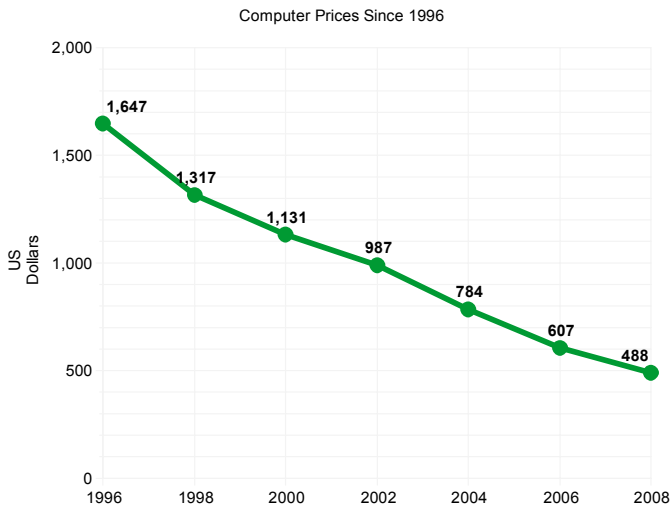
A Brief History

The first digital computer is, technically, the abacus. All computers (including yours) work based on similar rules. Nowadays, instead of sliding beads on a string, modern computers simply power transistors on or off to perform calculations. In 1946, the ENIAC using 20,000 vacuum tubes was unveiled as the first programmable, general purpose computer. The invention of the transistor and integrated circuits during the 1960's ushered in the era of big expensive mainframe computers that only large businesses could afford. In 1970 Intel's 4004 microprocessor heralded the beginning of the personal computer era. Because microprocessors were cheaper than their forbearers, it became possible for everyone to own a computer. By the 1980's simple computers were small enough (and cheap enough) to be fitted into many household appliances, such as washing machines. The 1980's also saw the start of the major market penetration of the personal computer. During the Internet expansion of the 1990's the personal computer became nearly as common as television and the telephone.

The Price Argument

In 1996, the average price of a new computer was \$1,647. Two years later, that price fell to \$1,317. Today you can buy a Dell Vostro 220 for under \$500 or an Asus Eee PC for \$170. It doesn't take a math genius to map the trend of declining computer prices. As computer components become cheaper because

of new innovations in manufacturing, the base price of a new computer system will continue to decline. That means within a few short years we can logically expect the price of a new computer to be cheaper than a good cell phone.



We will soon reach the point where it becomes cheaper to buy a new computer than to repair the old one. Computers will become disposable commodities. Now more than ever, the computer doesn't matter. Innovation will continue to drive down prices as companies vie for larger chunks of market share by producing cheaper and cheaper computers. While there will always be a market for high-end computers (e.g. the Alienware gaming machines), the smart businesses will embrace the Cloud Paradigm and stop spending money on equipment.

You could gain a substantial advantage against your competition by embracing the Cloud Paradigm. Start

reaping the cost benefits of cloud computing today. You'll be happy you did.

The Birth of Disposable PC's

A netbook is a small to medium sized, light-weight, low-cost, energy-efficient laptop, ideal for online services like web browsing and e-mail. These are phenomenal alternatives to more expensive computers since they normally run



under \$500! With the tough economy, businesses are giving netbooks a serious second look.

Small business owners looking to save money should definitely look at netbooks as a serious alternative. When money is tight you have to make every dollar work twice as hard. With netbooks, you gain a serious advantage. You get all the power you need for most work.

If you are running CAD software or you are editing movies, this is *not* the device for you. But most people don't perform those kinds of high intensity jobs. For your standard business computer user, the netbook provides all the capability they will ever need.

But more importantly, netbooks are a preview of what to expect. The era of being tied to a single computer is over. The computer will very shortly become a

cheap appliance. Information is what matters, or as they say: content is king. Who cares what computer you use to get your information? *Every* computer could be *your* computer.

When Machines Matter

Just a second, now! Haven't I spent the last few pages talking about how machines don't matter? Is this some strange bait-and-switch routine where suddenly the machines do matter? Can't I make up my mind?

It is true that individual machines don't matter. The information they contain is the real gold. However, when a machine performs a specific job, it matters. For example, the computer that runs your website matters. When it fails, your website is inoperable and that is unacceptable.

For our purposes, when a computer has a specific job it is a **server**. In the technical world, a server is a computer operating system that provides tools and services. The term is also used to refer to the physical computer that runs the server system. However, it is just easier to think of a server as any computer with a specific job.

Servers can provide a whole host of different tools and services, such as:

- File management
- Database management
- Fax management
- Video game hosting

- Printer control
- Website hosting
- Credit card processing
- And much more...

Logically, the more important the job, the more important the machine. If you have a computer handling your credit card billing, it is important. If that computer fails, you won't be able to run credit card transactions until you replace the failed machine. The job is what really matters, but the machine does the job, so therefore, the machine matters.

The value the server provides comes from the efficiency and speed with which it performs its job. The reason we automate certain tasks is because they are repetitive, tedious, time consuming and expensive to do manually. The server saves us time and money by doing these jobs at a fraction of the cost of a human worker. Also, some jobs can only be done by servers. There is no way a human worker can host your website or your databases. So, even though machines don't matter, the information they store and the work they do does matter. That means you have to protect those machines.

If you are not willing (or able) to provide for the protection and maintenance of your servers, you should just outsource the task. For example, very few people actually host their own website anymore. It is much more economical to outsource your web hosting to another company that can handle the maintenance and management of the equipment. At R-Squared Computing we host and manage about 700 websites across various web servers. Our customers get the

tools and services they need at a price they can easily afford. It is a win-win situation for everyone.

Servers that manage your company data, such as accounting information, client records, personal financial records and communications tools, are important. Your ability to access, manipulate and analyze that information is valuable to your business. That means you must protect that equipment from failure and harm at all times.

Protect Yourself

One of the most common problems I encounter as a technology professional is that customers fail to protect their servers. I have seen cases where the server was so completely unprotected that I was able to copy a list of all their clients (including names, addresses, phone/fax numbers and emails) to my laptop while waiting in the lobby! I used no sneaky hacker tools or other black magic; I just clicked on Network Neighborhood and started poking around the available resources. If these systems are truly crucial to your business, then you must protect them!

Protecting equipment includes routine maintenance. You must maintain all your computers, but especially your servers, if you want them to continue to operate at peak efficiency. Just like your car's oil change, you must perform the standard maintenance tasks required to keep a healthy computer. While these are tedious and time consuming tasks, it is important that you not neglect them otherwise you will start having problems. Those annoying small glitches that eventually grow into major problems can all be

avoided with routine maintenance. If you don't protect these machines, their ability to harm your business is astronomical.

The Future of Computers

Near Future

Computing will continue to become more of a utility. The next generation of computers will likely be very similar to netbooks and will function as simple Internet appliances that connect users to the Cloud. The era of computers with applications and data stored locally will eventually be over. The future PC will simply be a semi-smart terminal capable of connecting either via wired or wireless Internet connections and will probable cost less than \$200. I predict near ubiquitous penetration of these devices within the next 5 years.

In the very near future, everything will have a computer built in. Under the desktop paradigm, computers are large, sometimes bulky devices that provide processing power and save information for a single user at a time. The Cloud Paradigm eliminates the importance of the individual computer and pushes information and processing capacity onto the Cloud. The paradigm that will follow afterwards will see the final demise of the desktop as computers become embedded into everything you can imagine.

Ubiquitous Computing

Within 15 years, everything will have a computer. Ubiquitous computing will allow users to interact with multiple computers during the course of the day, oftentimes without even being aware of the interaction. This future paradigm will be based on small, cheap computers that connect to the Internet to share information. The more commonly cited example is the "intelligent refrigerator" that is aware of its contents, can plan menus based on available foods, can warn about spoiled food and can order new items automatically. Another example imagines a connection between computers embedded in your



clothing that monitor body temperature and communicate with climate control computers to adjust to your needs automatically.

Obviously this is still several years away.

However, it helps to bring into focus what tomorrow will bring. It never hurts to start planning for the next paradigm, especially when you have plenty of time to figure out how you can benefit from ubiquitous computing.

Chapter Two: Newer Isn't Better

"The first step toward change is acceptance."
- Stephen Covey

Gadget Fever

Do you have gadget fever? Have you ever caught yourself saying: *I gotta have it! I can't live without it.*

Whenever you experience those urges, take a deep breath and collect yourself. You only really need food, air, water, shelter, etc. You don't need the latest cell phone or other gizmo. I'm not saying you must live like the Amish; just remember that all technology is disruptive, so be cautious. Simply owning the latest and greatest gadget does not necessarily help your business.

You need to take your ego out of it and ask the hard business questions before you spend. Don't let a vanity purchase impact your finances.

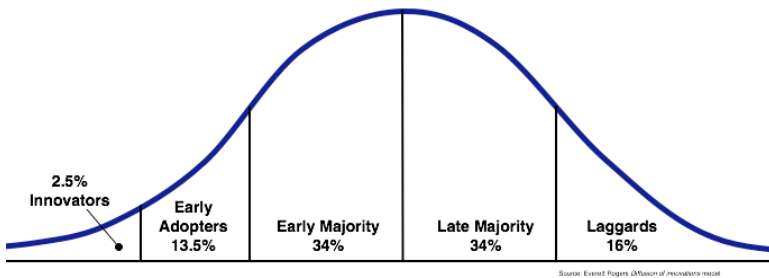
Disruptive Technology

All technology is disruptive. What I mean is that any new innovation will challenge the status quo. Because there is probably some business that thrives on the status quo, when innovation changes the status quo, there is an inevitable disruption. The key is to be on the right side of the disruption wave. Change is inevitable and the Digital Age means that change happens faster and faster. As a business

owner, you must know how to catch the wave of change before it drowns you.

Stages of Technology Adoption

You may be familiar with the Technology Adoption Lifecycle curve^{iv}:



The curve describes how new ideas and technologies spread across cultures. The researchers found that the bell curve above is a standard model for the adoption or acceptance of new technologies. Both demographics and psychological characteristics play a significant role at each stage in the curve.

Their findings indicated that:

- **innovators** - more educated, more money and more risk-oriented
- **early adopters** - younger, more educated, tend to be community leaders
- **early majority** - more conservative but open to new ideas, active in community and influence to neighbors

- **late majority** - older, less educated, fairly conservative and less socially active
- **laggards** - very conservative, little money, oldest and least educated

Ultimately it is your risk tolerance and education that determines where you fall on the curve. Obviously familiar technologies related to your business may lead you to an earlier stage on the curve. However, I usually advise all my customers to avoid the Innovator and Early Adopter stages of any new technology. Typically, these are the users that absorb the greatest amount of risk associated with new technologies.

For example, on June 29, 2007, Apple Computer released the iPhone. Innovators and early adopters stood in line for hours to pay \$599 per phone. Not even three months later Apple announced a \$200 discount on the high end iPhone which caused a massive customer backlash. Because of the incredible hype, normally rational people rushed out to overspend on a new cell phone. If they had waited three months they could have gotten the same phone for 30% less. Innovators and early adopters tend to absorb the highest costs for new technology. They are the consumers that repay the lion's share of the research and development costs.

There is also the risk posed by bugs and problems. Everyone has a story of a new product or gizmo they bought that didn't work right. Innovators and early adopters always bear the brunt of these problems since the company hasn't had time to iron out the bugs. There is significant business risk associated with errors and problems with new technologies. Could you imagine a new productivity software that

paralyzed your business because of bugs? The hidden costs of these problems can be astronomical. A great example of a product failure caused by excessive bugs is Microsoft's Windows Vista. Vista suffers lackluster sales after computer geeks worldwide largely dismissed it as error prone and faulty. Regardless of the number of updates and repairs issued by Microsoft, the damage was done and Vista never recovered.

Finally, there is the very real danger of failing to capture market share. If a company cannot launch their new technology and capture enough market share, there is no future for the product. A great recent example is HD-DVD which lost the high definition format war to BluRay. How many people purchased HD-DVD equipment only to have it become obsolete? I am certain you can think of other examples. If you are old enough you may remember the battle between LaserDiscs and DVDs or even VHS and BetaMax. The technical history books are full of examples of failed technologies that left innovators and early adopters high and dry.

When to Buy In

Ideally, you should always avoid the bleeding edge. That means don't pay the premium costs shouldered by the Innovators.

Unless you know



Photo by gunnar_maas

Sony BetaMax Player

the product, the manufacturer and you stand to gain a significant competitive advantage from the new technology, you should always wait until the Early Majority stage to buy into new technologies.

By this point in the Technology Adoption Lifecycle the costs of the technology have dropped. Since the Innovators and Early Adopters absorbed most of the research and development costs, the manufacturer can drop prices to encourage the Early Majority to buy in. So, you can pick up the same (or better) product at a discount.

Usually by the Early Majority point in the curve, the manufacturer has had the opportunity to release a few updates or has made necessary corrections. These repairs can be a huge benefit to you and your business since you won't have to shoulder the hidden costs associated with working around unforeseen problems. Typically, by this stage in the lifecycle curve, most manufacturers have also included a few new features to "sweeten the deal." While these new features may have problems, you can rest assured that the nastiest surprises have been fixed.

If a product survives into the Early Majority stage, it should stick around. Because the Innovators and Early Adopters have provided a financial foundation, the company will probably survive to continue supporting and developing the technology. While this is still no guarantee against mismanagement and other causes of business failure, at least you know they won't go broke because their product doesn't have a wide enough customer base.

By settling comfortably in the Early Majority stage of

the adoption lifecycle you can avoid all the risks that the Early Adopters and Innovators have to bear. This stage of the curve also ensures that you will have access to better quality technologies which have been rigorously consumer tested. Plus you will also have peace of mind knowing the company you have purchased from will be around for the foreseeable future. The Early Majority still benefits from new technology without shouldering the associated risks and heavy costs.

Laggards Are Losers

At the tail end of the Technology Adoption Lifecycle curve are the Late Majority and the Laggards. The timing between the Early Majority and the Late Majority is very difficult to measure. I define the Late Majority when your competition has already started to benefit from superior technology. However, the Laggards are those who suffer the worst.

While Innovators and Early Adopters are overpaying for new technologies, the Laggards are getting the best bargains. Unfortunately, they are also buying into the technology just before it is replaced by something newer. Laggards are the people rushing out now to buy DVD players. These are the people who still boast about their VHS and Eight Track players.

Laggards are so far behind the technology curve they are unlikely to ever catch up. Obviously in some industries this is not as bad as in others, but any competitor that has harnessed technology wisely will have a substantial competitive advantage. Keeping up

with technology is mandatory under the new computing paradigm. While you don't need to be a tech expert, you should keep up-to-date with the latest developments specific to your industry.

The only reason to incorporate technology into your business is to improve your ability to compete. You provide a product or a service that serves a market niche. Technology can help you to better identify, communicate, examine, understand and win over that niche. If you stray too far behind on the technology curve you will lose your competitive advantage and run the risk of losing your customers to another business that can better serve their needs.

Fall behind on technology at your own risk. Whether you like it or not, technology has become an integral part of our day-to-day lives. Laggards will not survive as competition gets more ferocious, especially in hard financial times.

Comparison Shopping

SmartMoney.com published a great review of the top online price comparison sites^v. Their reviews found PriceGrabber.com was the best website for comparison shopping. One of the better features included on PriceGrabber.com is the ability to setup alerts for products based on your desired price range. With the constantly declining price of technology products, it doesn't make sense to pay bleeding edge prices.

They also rated Yahoo! Shopping, Shopping.com and NexTag as good sites. Rated towards the bottom was Google Products (AKA Google Shopping) because it provided poor details on listings. In their defense, Google says the tool is simply a way to find products and the stores that sell them.

When using these price comparison tools you should perform searches by the part number of the product you want. For example, if I know that I want a specific device, I look up the part number on the manufacturer's website then I plug that part number into PriceGrabber.com. This ensures that I get the exact item I want to buy.

Stop Falling for Hype

As a business owner you need to be wary. There are countless salesmen and marketing professionals whose sole responsibility is to separate you from your hard earned dollars. They will use every trick in the book to get you to buy. They will tell you that your

business cannot survive without their product or service. They will flatter you or even threaten you into a sale. Don't fall for the hype! Fight the urge!

The truth is that we make decisions emotionally. How we feel about something is the primary reason we buy it, then afterwards we use the logical information to justify the purchase. The gigabytes and other numbers justify our decision, but you decided to buy because of how you felt.

As the primary decision maker for your business you must be cautious how you spend your money. There are people who rely on you to make good decisions



so they can keep their jobs. Whether you like it or not, you are responsible to them and to yourself. So, make spending decisions based on real business needs, not on that

awesome salesman's hype. Is there a valid, real business case to purchase? Can your company live without it? Will there be a genuine business advantage gained by the purchase? Will you be more efficient? Will it reduce costs?

All of these questions should be answered before you sign the check. But don't take the salesman's word for it! I realize this might come as a surprise to you, but some salesmen are not above lying to close a sale. So, make sure you check their claims. Look for reviews on the Internet or in trade magazines. Find out if there is anyone else using the product or service and contact them to learn their opinions. You must

exhaust every avenue before you hand over your money.

Obviously I am not talking about purchasing office supplies. By all means, buy that toner, paper and sundries. I am talking about expenses that exceed your petty cash budgets. I am talking about computer servers, software systems, new construction, electrical generators, and everything else that the accountants refer to as a "capital expenditure." Here's a hard and fast rule: If it costs more than you normally spend for a month's worth of office supplies, do some homework first!

But you're busy, you say. You have too much to do. You can't be running around researching every purchase. So delegate. Get someone you trust to look into it and to develop a simple business case report which explains the economic reasons for the purchase. Instruct them to keep it simple and reduce their conclusions to a single page. If you have questions, you can always ask them to justify their positions with additional research data. A business case is invaluable when you are considering any large expense.

The Business Case

A business case is an analysis of the real benefits to your business of a possible purchase. It should include the background for the purchase, the expected business benefits, the available options, the expected costs and risks. You should also include the option of Doing Nothing including the costs and

risks. With this information, the logic behind the purchase is clear.

If you don't have anyone on staff that is capable of producing a business case, then look to outside help. For example, if it's a computer related purchase then bring in a business technology coach to review the matter. In order to ensure that your outside expert will provide you with an accurate analysis, tell them from the beginning that they are only being hired to produce the business case, not for the purchase of the system. Too many consultants are really just salesmen in disguise who are more interested in selling you their systems. In the computer consulting industry there are numerous opportunities to earn hefty commissions by convincing you to buy from a specific vendor. To make sure you get straight and honest answers, tell them you aren't going to buy from them. A real consultant (as opposed to a disguised salesman) will accept the terms and will happily prepare the analysis for you.

As a business owner you have to be smart. Don't fall for marketing hype and brilliant sales pitches. Spend your money wisely. Learn to rely on business case reports that justify expenses that are greater than your normal purchasing rates. A business case will help you run your business better and will allow you to spend your money on the products or services your company genuinely needs. And that always helps you sleep better.

Needs Assessments

A Needs Assessment is similar to a Business Case. Where a business case is trying to document the real, business benefits of a purchase, a needs assessment is a plan for achieving your goals. A Needs Assessment starts when you ask yourself where you are versus where you want to be. It's not just the what, but the who, why, when and where, and how you will get it done. It is a simple analysis of your current situation and a basic outline for how to get to where you want to be. It is a roadmap towards the future.

Remember, proper planning and preparation prevents problems! You want to plan the process otherwise you can miss vital problems. It is very easy to say you want to triple sales next year, but without a plan, you aren't going anywhere. A needs assessment is how you ensure success.

Step 1. Examine current functions

The first step in any Needs Analysis is examining how you work right now. You must analyze everything you do and how you do it. Let's assume you are interested in buying new accounting software because you have outgrown your current product.

- How many steps are needed to create an invoice?
- A packing slip?
- How many steps are involved in printing a check?

- What controls are there to ensure that it is done properly?

You need to understand how and what your current systems provide. I'm not just talking about a basic software features list. I am talking about highly specific job-related functions that your employees use to do their job. Write all these down and then move on to the next step. If you don't use the feature, then it doesn't matter if it can convert US Dollars into Yapese Rai Stones. Focus on the functions you use.



Yapese Rai Stone

Photo by MBisanz

Step 2. Map existing processes

A *process* is a collection of the steps involved in getting a specific job done. The procedure for printing an invoice is a process. In every case, each process is designed to achieve a result. The easiest way to unravel your processes is by picking one business result (invoice, bill of sale, consulting report, etc.) and then following it backwards. Think of it like picking apart a sweater, one strand at a time.

Back to our accounting software example:

- what information, documents, and other data is required for your accounting program?

- How does that data get to the people that handle the job?
- Where does that information come from?
- How do they get it?
- Who is responsible for failures or errors?
- Once information is entered, processed, massaged, manipulated in the accounting software, then what happens?
- Where does the information flow?

You want to chart every step of the way. Literally, you need to diagram the whole thing from beginning to end. Also, if you have employees don't expect that the workflows are the same as when you originally designed them! Processes tend to experience organic growth as workers adapt to changing circumstances. Change is inevitable, so make sure you map out how it works "now, in reality" as opposed to how it worked "back then, in theory." This is the part of the Needs Analysis where you determine the exact starting point. Incidentally, it isn't a bad idea to create a workflow process map every year to try and spot hidden inefficiencies.

Step 3. Examine new offering

This is when you finally get to examine what the new product can provide. Take the list of all the functions you wrote down in Step 1. You must match every single one of the uses of your current offering to the new product. Please note it is likely that the new product may do things very differently so you will need to refer to user manuals and other available sources of documentation. If the new product does not perform every single function you are getting from

your current source, then don't switch unless you are prepared to change *how* you work.

Back to our accounting software example, you need to know how it performs all the same tasks you need.

- Does the new software change the order of operations?
- Does the work flow change under the new product? How? Why?
- How does it generate orders, sales receipts, packing slips, bills of lading, accounts receivable aging, invoices, and everything else you need it to do?

Step 4. Map necessary process changes

Even if you just upgrade from one software version to another (from 2007 to version 2009, for example), it is possible that you may need to make workflow process changes. Workflow must adapt to the tools, not vice-versa. The only way to get software that does not change your workflow is to develop custom software. While this isn't as expensive as it once was, it is still more expensive than most off-the-shelf software packages. You can save yourself tons of grief and expense if you simply plan ahead for the necessary changes that the new product will require.

In this step you will use the information you collected in Step 3 and start mapping out how to adapt your current operations to work efficiently with the new software. Based on our previous example, if your new accounting system now requires the creation of an order before you can generate an invoice, you will

need to adapt your processes to comply. Now you must determine who is responsible for the new changes, how those changes are implemented and so forth. Once again, it is best if you diagram all these changes to help you identify bottlenecks in the smooth flow of work and information. It is much harder to pinpoint these potential breakdowns without a visual diagram to guide you.

Step 5. Is competitive advantage gained?

Now that you have all the important business information in front of you, it's time to subject it to critical analysis. Now you get to ask yourself:

- Do I gain competitive advantage from this new product/service?
- Will my business work better, faster, cheaper?
- Will I improve the quality of service I provide to my customers?
- Will this make my business better?

If you answered Yes most of the time, then go ahead and spend the money. If the answer was No then don't spend any money and move on to the next item on your To Do List.

Many of my customers get very frustrated at this point in the analysis. Since they spent so much time and effort getting all the information together they feel that they must make a Yes decision otherwise all the work will be wasted. Don't be fooled by that poor logic! Better to spend some time and a little money to figure out if you will gain an advantage than to rush blindly into an expensive purchase that might actually hurt

your business. There is nothing worse than seeing a good company collapse because of a bad purchasing decision. I have seen far too many cases where a poorly investigated product wrecked a successful company. Don't get caught in this trap!

The Cure for Gadget Fever

The cornerstone of Nearly Free IT is all about cost control. You can't keep the money you spend (unless you are the government!). By eliminating Gadget Fever you will help control costs and stop the spread of potentially disruptive technologies in your business.

You also have a better understanding of how people buy technology. You now understand why you should wait to buy new technology until the Early Adopter stage to avoid over paying. You really don't need the latest and greatest gizmo. You need to be smart about how you spend your money.

The Business Case and Needs Assessment are two great tools you can use to figure out the value of a purchase. It is a great way to know for certain if the benefits of a new purchase will outweigh the costs. Even though they can be time consuming, they will definitely help point you in the right direction. Ignore these tools at your peril.

So far you have learned how to avoid technology fads, how to spend money wisely and how computing is now a utility. In the next Chapter you will learn all about hidden costs and the real cost of all the "free" software available on the Internet. Warning, there is some intense accounting and economics in the next

chapter. If this will cause you to suffer mental harm or terrifying flashbacks to Economics classes in school, feel free to skip ahead. Good luck!

Chapter Three: Understanding Free

“Power and machinery, money and goods are useful only as they set us free to live.”
- Henry Ford

The next step on the road to Nearly Free IT is understanding *real* costs. Everything costs something, it might just not cost in money. Once you understand the real costs of everything, you are ready to look for real value.

Buyer Beware

There is something that always makes us cautious about the word "free." Maybe you hear the ancient mantra that proclaims: *You get what you pay for*. A solid and ringing warning from wise ancestors that knew to be careful when someone offered something for nothing. The real warning isn't about freebies, however, it's about hidden costs!

Nothing is really free. There is always a price. In the computer world, the price might be spyware, a return web link, a virus, a botnet zombie, your email address or your ZIP code. I think you'll agree that some of those prices are too high, but others are perfectly reasonable depending on what you get in return. Some hidden costs are perfectly acceptable.

We all know what it's like when money is tight. There's never enough cash and every chance to cut costs should be embraced. The key is to understand

the hidden costs and to decide if they are too expensive for you.

The Internet is full of free software and services that can reduce your costs substantially. With smart strategies you will be able to virtually eliminate your software costs. I will always try to be clear with you about the costs involved, and I will only recommend you safe products that have been Certified R-Squared Safe by my expert staff of engineers. How much money would you save if you got your software for free?

Hidden Costs

Hidden costs lurk in every possible purchase. They lie in the shadows waiting for the unsuspecting. Suddenly that product or service that is supposed to save you money, suddenly costs you double. We have all experienced the torment of fees, taxes, fines, honorariums, bribes, markups and surcharges. It's like a bad horror movie.

Hidden costs include changes to your business processes. This means you will need to change how you work in order to use the new product or service. There are always costs involved with a process redesign so make sure you map out all the necessary changes and the associated costs before you make a decision. You identify these costs by performing a Business Case and Needs Assessment, as described in the last chapter.

For example, large software purchases are laden with hidden costs. The implementation of an Enterprise

Resource Planning (ERP) software can quickly turn into a never-ending money pit. ERP is a complete software package that handles your entire business, from accounting to warehouse management. Hidden deep in the fine print of all ERP product literature is the warning that a significant redesign of company processes is required. If you don't plan ahead and include the costs of these changes, you will be in for a nasty surprise. You might think that the steep price tag on ERP systems would be all inclusive. Don't get caught by surprise!

Hidden costs come in all shapes and sizes so you must spend time examining all the elements involved in implementing a new purchase into your business. If you are cautious and work diligently, you will know what you are getting into. Don't rush in blind and never let someone pressure you into an untimely decision. The best salesmen are experts at forcing an early decision. The more money you are looking to spend, the longer you should study it. Take your time; if it's a good buy today, it will still be good tomorrow.

WARNING!!! Economics ahead!

If you will be harmed by reading this, please skip ahead.

Understanding Opportunity Cost

The *opportunity cost* of a resource is the value of the next-highest-desired alternative use of that resource. For example, if you spend time and money at a movie, you cannot spend that time at home reading your favorite blog and you cannot spend the money

on an iPhone. If your next-best alternative to seeing the movie is reading my blog, then the opportunity cost of seeing the movie is the money spent plus the pleasure you forgo by not reading the blog.

Read My Blog

www.NearlyFreeIT.com/blog

Take a student who pays \$4,000 for tuition to college. Assume that the same student also receives an \$8,000 scholarship. Therefore, the cost is \$12,000 and the student pays only 1/3 of the total tuition. However, the true cost to the student is the full \$12,000 plus the lost income the student could have earned instead of going to school. If the student *could* have earned \$20,000 per year, then the true cost of a year's schooling is \$12,000 *plus* \$20,000, for a total of \$32,000. Of this \$32,000 total, the student pays \$24,000 (\$4,000 in tuition plus \$20,000 in forgone earnings). That is the opportunity cost. It's how you could have spent money or time if you had chosen another path.

Incidentally, opportunity cost is *not* the sum of all the available alternatives when those alternatives are mutually exclusive. So, if the student could have had a choice between the \$20,000 a year job or a \$50,000 grant to build houses in New Orleans you do not include both in your calculations.

Opportunity cost isn't just measured with money; it can be anything valuable. For example, in a restaurant, the opportunity cost of eating a steak

could be trying the salmon. Ordering both meals could cost more than double - not just the extra money to buy the second meal but the cost to your reputation if you appear gluttonous or extravagant.

Calculating opportunity costs is fundamental to knowing the real cost of anything. When there is no monetary cost (what accountants say instead of "price") for an action, ignoring opportunity costs may produce the illusion that it's free. These opportunity costs then become the hidden costs which can come back and bite you.

Now, it's time for a reality check. It is possible to take this too far. If you keep mapping out possible alternatives with fanciful opportunity costs you will quickly drive yourself insane. Don't do it! Keep it realistic and don't go to extremes.

Opportunity cost is an important tool to help you understand the real costs of any decision. The cost of the alternative use of a resource must always be taken into account. You can't spend the same money twice. Remember, money is not the only resource! Be sure to measure all the resources in use before committing to a course of action. Finally, don't let calculating opportunity costs paralyze your ability to make a decision. Like all tools, opportunity cost is best when used wisely.

The Hidden Cost of Free Software

With all the free software available online, you must be aware of the hidden costs before you run the risks.

If you know the hidden costs ahead of time, you can plan accordingly.

Some examples of hidden costs include:

Learning Curve

All software takes time to learn. Many free programs don't have the benefit of professional human interface designers, so you get an interface built by an engineer. Unfortunately, engineers don't necessarily think like everyone else. We've all experienced awful software; it isn't pretty.

I remember one particular 3D design software that included some of the most amazing features I had ever seen. The only downside was the impossible number of buttons that completely cluttered the interface making it impossible to work comfortably.

Make sure you have an idea for how difficult it will be to learn the new, free software. If it will significantly impair your productivity then you might be better off looking somewhere else.

Malware

Too many free, online products come laden with all sorts of nasty surprises. In many cases these viruses, trojans and rootkits will sneak past even the best anti-virus software during the installation process. Before you download and install anything, make sure that it has been certified free of viruses and other malware by a respected third party authority.

Ads/Spam

Some free products defray their costs by placing

advertisements inside the software. While this is usually not a problem, you might be concerned that it will make your business seem less professional if you have programs running with ads.

Many free software providers will require that you provide them with an email address so they can send you offers. Sometimes, they will sell your email address to Internet marketers. Everyone has had the experience where they sign up for a newsletter and suddenly are inundated with junk mail. That means you must always check Privacy Policies to make sure you are protected.

A good strategy to use whenever an online vendor asks for your email address is to provide them with a spam trap. Just create an email account with any of the multiple free email services like Yahoo! Mail or Gmail. Then use that email address whenever you are asked to provide an email online. If you want to be nice, you can check that account every so often to clean out the junk. If not, who cares?

Buggy/Error Prone

You get what you pay for...sometimes. That means you might get software that has quirks and errors. These bugs can be a nuisance but they might still be better than paying for a similar commercial product. You can learn all about bugs and known issues by reading online reviews.

You should never just rely on one review! You never know what the reviewers motives are, so be sure and check multiple reviews. The Internet gives everyone a

chance to express their opinions. Check these opinions and make smart choices.

Anyone that has used Google Documents will attest that the service has been in *Beta* stage forever. Beta software is any product that is stable enough for wide testing but is not really ready for commercial distribution. It also means that new features are still pending and will be made available later on. Beta products are notoriously buggy and prone to failure so always be careful when you work with beta products. Never rely on beta software for mission critical needs!

Availability

If you are using online software, such as the aforementioned Google Documents, you should be aware that service outages can occur. The most significant Google Documents outage shut down several businesses for two days. Be aware that availability is always a concern when dealing with online software delivered as a service.

Obviously this also extends to your Internet service provider. If your Internet has a habit of going down for long periods of time, you should look for a new provider. Until you have a reasonably stable Internet service, you should avoid all online software offerings.

Missing Features

When it's free, you can't complain about what you get. Some free products may mimic commercially sold products very closely but there are usually some missing features. To stay with the Google Documents example, Microsoft Word offers a significantly better

set of features for word processing. However, MS Word will run you about \$200 against Google Documents price tag of \$0. If you can live without the missing features then it's a no brainer to choose Google Documents. But if you need those missing features, you have to either buy Word or examine other free word processing software titles.

To make good decisions you will need to know the features used by your employees in their daily work. Once you have identified all the required features you can begin to examine the available offerings. Chances are you will be able to find a product that meets all your needs.

Obviously these are not the only hidden costs. I am sure you can think of a few that are not on the list. The idea is to examine carefully every product to ensure it is a good fit for your business before flying off the handle. Don't jump too soon just because it's free.

Balancing Hidden & Acceptable Costs

The investment community calls it Risk Tolerance but back where I grew up, it was called **The Hit**. It all boiled down to a simple question: how much can you afford to lose? How hard can you get Hit?

Everyone has a different answer. The secret to taking risks is to know that answer. How much of a Hit can



Photo by Pavel Sevela

you take? When you know that answer, you will sleep much better.

Now, for most people, that Hit comes with a dollar sign attached, though not always. The next question is how much money can you lose? Obviously, during hard financial times, that answer is Very Damn Little. The problem is that no two situations are the same. So, now we need to be flexible with that dollar figure depending on a simple analysis. You need to ask yourself a simple question: Is the amount of money involved worth the risk of checking out the offer?

Let's face it, we have all fallen prey to a great salesman who promises the world and delivers a complete piece of junk. I bought a futuristic mop-thing that exploded into a dozen pieces in my hands three days later. But I really didn't care because it cost \$5. At \$5 my risk tolerance is pretty high. I can afford to make a bet on the product or service.

Now, a \$5 mop-thing is a low-end example. Risk tolerance starts getting complicated the larger the dollar signs get. As the numbers climb, so does the anxiety. Obviously these are the decisions you must weigh carefully. I think you know what I am talking about, so I'll move along...

Protecting Yourself

Now that you know more about hidden costs, you know that you have to do your homework. The questions you must ask are:

- Do the advantages out-weigh the disadvantages?
- Will the learning curve be a problem?
- How will this be disruptive?

You need to answer those questions in as much detail as possible. You've got to do your homework! You need to take your time and get those answers.

Inner Peace & Other Myths

Sorry to burst your bubble, but some people are just naturally wired for stress. If you are one of these lucky winners, it will take lots of meditation and whatever else the yogis prescribe before you will have inner peace. As for the rest of the world, once you understand how much of a Hit you can take and you have done your homework, you'll sleep better.

To Pay or Not to Pay

With a little creativity and some planning, there are countless ways to get free computer time and Internet access. If you plan on using these guerrilla tactics, then here are some great ways to get free access to a computer and to the Internet. No matter what, I still think it's a better idea to buy your own computer, but if you can't afford it, these are great resources.

Free Computers & Internet

If all you need is access to a free computer for a few hours, here are the most obvious places to get one. With a little thinking and some creativity, I'm sure you can figure out several more that I missed.

Libraries

Almost every library now offers Internet-connected computers. You should talk to the librarians to find out when the computers are usually available and then plan accordingly. The last thing you want to do is show up ready to work and not have a computer available. The benefit of working in a library is that you have ready access to all the research and books in the library! If you are very nice to the librarian, you may even get them to help you by doing research for you. Incidentally, librarians have access to amazing resources! My local librarian still provides me with my business mailing lists, which saves me a fortune. If it's an information resource, ask your librarian. It doesn't hurt and you might be pleasantly surprised.

Community Centers

Many community centers also offer free computers. Usually these computer labs are set aside for community computer classes, but they can also be used by residents. In most cases, you will need to make an appointment ahead of time to reserve the computer. If this is the case, try to schedule computer time as far in advance as they will allow. Whatever you do, make sure to keep those appointments!

Nothing will eat up your goodwill better than missing appointments. Once the workers in the community center get to know you, they will help you by steering you away from the computers that are "acting up."

3 F's (Friends, Family & Fools)

Chances are someone you know owns a computer. All you need to do is ask them if you can use it. If you are polite and pleasant about it, chances are they will say yes. Whatever you do, don't abuse this privilege! Always try to leave the computer in the same condition you found it in. That means don't touch any of their files and don't play with their settings. No matter how annoying their sound effects or background picture, leave it alone! Nothing will get you evicted from a friend's computer faster than messing with it. Just leave it alone and remember what you are there to do. Focus on the work and ignore the rest.

Work

If your job provides you with a computer, you can always use that machine for your own uses. Be aware, this is the same as stealing so I don't recommend it. You should probably get permission from your boss to use the computer for non-work purposes. No matter what you do, make sure you review your employer's Computer Use Policy. They will usually spell out what you can and can't do with their computers. Remember, just because you work on the machine doesn't make it your property. That computer is still owned by the company and, in turn,

everything on it belongs to your employer too. Whatever you do, don't leave any of your personal files on your work computer. And, if you get caught, don't mention me.

Free WiFi

Most coffee shops and other such locations offer free wireless Internet access. These places are usually very friendly and will let you sit for hours on their Internet connection. However, they may turn ugly if you don't buy the occasional cup of coffee. Just remember that the free WiFi is a service for their customers. As long as you are a customer, there won't be a problem. Unless the coffee shop has free computers, you will need to provide your own. For a complete listing and map of free Internet hotspots, check out WeFi.com

Another source of free WiFi is to steal it from your neighbors. Many people set up wireless Internet routers in their homes and leave them open for anyone to use. Technically, this isn't stealing (at least I don't think so) since they can secure their connections pretty easily. However, the moment you use their wireless to try to access data on their computers, you are crossing the line. As far as I am concerned, if they are nice enough to leave their wireless Internet open to all, you should be polite and leave their data alone.

The Downside of Free Computers

As you have noticed, I always try to give to the downside of every option I discuss. When dealing with free computers and Internet, there are several issues to take under consideration.

1. No Storage

Whenever you work on a public computer, you won't usually be able to save your information on that machine. If you want to keep track of your work and you don't want to store your data online, invest in a cheap USB thumb drive. A thumb drive is portable memory storage. It is re-writeable and holds its memory without a power supply. Thumb drives will fit into any USB port on a computer. They will also "hot swap," which means a user can plug the drive into a computer and will not have to restart it to access the thumb drive. The drives are small (about the size of a human thumb - hence, their name) and they are very stable memory storage devices. As of this writing, a 1 gigabyte thumb drive costs under \$10.

2. No Software

Sometimes you need a specific computer software. If the computer doesn't have that software, chances are you won't be allowed to install it on a public computer. One of the Three F's might let you install the software on their machine, but no one else will. In these cases, you will have to make due without or bite the bullet and buy your own computer.

3. No Privacy

Whenever you are in a public setting you will always run the risk of some joker reading over your shoulder. You can be a jerk and tell them to buzz off or you can just ignore them. The only concern is the possibility that someone will steal your ideas for themselves, though that is rare. In addition to wandering eyes, you should also be aware that public computers are set up to keep a record of your activity. Assume everything you do is monitored and recorded.

4. No Freedom

Most places that offer free computer and Internet will block access to certain Internet sites. You can usually get a complete list of what kinds of content they block by asking for it. While this doesn't necessarily apply to the Three F's, be aware that you can make a lot of trouble for your buddy by browsing pornography on his wife's computer. Nothing will get you uninvited faster. Just be smart and you shouldn't have any trouble.

5. No Security

Because most public Internet computers and WiFi stations are not encrypted, hackers can see what you are doing. That means you should always avoid logging in to your bank website or other private information. Anyone with even minimal hacking skills will be able to capture your information and make your life miserable.

Onwards

Just because it doesn't cost money, does not mean it is free. Hidden costs are everywhere and it is important that you be aware of them. If you don't plan ahead and know the hidden costs you are in for some nasty surprises. Don't make a catastrophic business decision because you wanted to save a couple dollars.

With a little common sense and some good fortune, you should have no problem getting access to a free computer and high-speed Internet connection. While there are some significant downsides, with some smart planning, you can easily sidestep most of the problems. Just remember, **public** means "available to anyone," so govern yourself accordingly.

In the next chapter, we will discuss strategies to make your company smarter.

Chapter Four: Build Firm Wisdom

“All great change in business comes from outside the firm, not from inside.”
-Peter F. Drucker

What Is Firm Wisdom?

Firm Wisdom is more than just an employee training system; it is a way to capture the most valuable information in your business. Too much of the practical business wisdom acquired over the years is never documented. The hard won wisdom that you have earned over time should be preserved for your future employees to use as a valuable reference tool.

Properly implemented, Firm Wisdom can reduce training costs and the time it takes a new employee to become productive. It can provide a powerful collaboration tool that will keep your team working together and on the same page. It is a powerful philosophy that can dramatically improve your business.

Understanding Institutional Memory

Institutional memory is the collective knowledge, facts, ideas, experiences and know-how of a group of people. It can be found in corporations, government organizations, professional groups, religions, sports teams, academia, and even, entire cultures. For example, every business has someone that knows where everything is stored. From paper clips to new invoicing forms, this person holds the knowledge that keeps the business running smoothly. If this person is lost, that information is lost.



Institutional memory is how you instill a group's ideology or work methods. You build a team by teaching new members your traditions, jargon and work processes. Members of the group can identify one another based solely on their knowledge of this information. For example, Jimmy Buffett fans understand that being called a "Parrothead" is not an insult. This is also common in military training to force new recruits to learn a new language, new ways of working and so forth.

Institutional memory requires the ongoing transmission of information between members. If people with information do not pass it along to new members, there is no way preserve that knowledge. Many businesses try to overcome this problem by developing Employee Manuals. Sadly, most of these

are either out-of-date or, in the worst cases, completely useless. I have seen too many employee manuals that are a waste of paper.

On the flip side, institutional memory can be indoctrinated to the point that it becomes impossible to challenge when new information is found that contradicts it. When institutional memory becomes too rigid, it becomes a hindrance to your business. Usually, you cannot solve new problems with old methods.

Problems With Institutional Memory

Obviously, the biggest danger is that a key employee will leave: either because they got another job or because they get hit by a bus. Once they are gone, all that accumulated knowledge goes too. Now, someone has to step in and take over the job, either another employee or a new hire. In either case, there is a learning curve involved and that means lost productivity.

Hard to Transfer

Institutional memory is time consuming to transfer. However, since it is usually transmitted verbally, there is a real danger of information loss. More often than not, when someone asks you "*just a quick question*", you answer verbally. It is too time consuming to write a formal email to explain where the paperclips are stored. Obviously the supply closet inventory isn't as important as the proper way to fill out a bill of lading or the correct format for bank reports.

Most everyone has played the Telephone game where a large group of people is asked to whisper a message around the room. The first person whispers "The door is creaky" and by the time it gets to the fourth person the message has become "Dodos are creepy." This is a perfect example of information loss. As the message is passed along verbally it changes. It is part of human nature to change things. You can play this game hundreds of times and you will always lose information in the process. Orally transmitted information is subject to data loss. You don't want that happening with your important business wisdom.

Formal Training is Expensive

Every new hire is someone that needs to be trained. Regardless of their experience and ability, new workers need to learn the specifics of how you work. Every business works a little differently. Different bosses have different standards and varying demands. Every new hire comes to your business with no knowledge of your firm's internal operations. They won't know company policy for the day-to-day job-specific work they are expected to do. They'll know the employee manual, (if they read it) but chances are the employee manual (if you have one) is so generic that it doesn't explain specific job functions.



Source: Bliss & Associates Inc., <http://www.isquare.com/turnover.cfm>

Ideally, all new employees receive formal training during. Studies conclude that formal training significantly improves a new employee's productivity. The problem is that most small businesses can't afford formal training. Instead they resort to the *Throw 'Em to the Wolves Training System™*; it's the corporate equivalent of teaching someone to swim by kicking him overboard. Basically, you get someone to show the new worker around the office, introduce her around, present her to her workspace and "Good luck! The boss wants that job done yesterday."

Try to remember back to your first day at a new job. Between trying to learn a new environment (where's the bathroom?), to meeting lot's of new people (what's that idiot's name?), to the new-job jitters, chances are you didn't get much work done the first few weeks. It is unrealistic to expect a new worker to remember all the detailed information he is bombarded with on Day One.

I remember my first day as a software tester. (Coincidentally, it was the same day that I coined the *Throw Them to the Wolves Training* phrase.) I remember the hordes of misanthropic computer nerds; an uninformative manager; a bullying, overbearing President; and a foreign computer. Forget testing any software, I wasn't entirely sure how to turn the damn machine on! I remember thinking "What the hell am I doing in this mad house?"

The point is formal training is expensive and small business must find every possible trick to keep costs down. Your employees need training but we also know that verbal communication is unreliable. Institutional memory is collected over time, and while new workers are learning what they need to know, you are losing productivity.

Inflexible

You can't teach an old dog new tricks, and a leopard doesn't change his spots. Both are statements of inflexibility. When you cannot adapt, you won't stay in business long. Another concern with institutional memory is that it tends to remain rigid and inflexible. You start falling prey to the "*we've always done it that way*" thinking. This is a death knell for most businesses.

Circumstances change. As business owners we must be able to face that change rationally and make the necessary adjustments to survive. When we are trapped into outmoded patterns of thought, we will have a miserable time trying to adapt to changing realities. As circumstances change, we need to

change the way we work. Not necessarily by reworking or adapting existing institutional memories but by a deliberate plan of action.

Organic Growth

The last major problem with institutional knowledge is that in addition to the data loss that comes from verbal communication, there is also a tendency towards organic growth. As workers confront new situations, they adapt what they know and apply it to the new circumstances. A simpler way of saying that is "when you only have a hammer, all your problems look like nails."

This leads to an organic shift in how your company gets things done. When examined individually, these may not seem like a big deal. However, when you add up all the changes, they can be significant.

I realize some readers may think there is a contradiction here. If institutional memory is inflexible then how can it also experience *organic growth*? Here's the difference: organic growth is only thought out in the most simplistic problem resolution framework. The worker identifies a change in an otherwise normal procedure, adapts existing processes and finishes the task. However, there is no deliberate evaluation or understanding of how this seemingly minor change will affect everything else.

For example, Joe processes all incoming invoices for payment. However, a new accounts payable software requires Joe to change how he processes each invoice. Since he has no other choice, Joe simply

adapts to how the software works and keeps processing invoices for payment. Little does Joe know that the change he initiated has an enormous effect on Maria who is responsible for printing and mailing out checks. Because Joe has no idea how his work connects to Maria's, his change now causes Maria to adapt how she works. These ripples can spread through an entire company in no time.

Embracing Change Wisely

Institutional memory is the collected knowledge of all the members of the team. It helps to instill team spirit and to foster team unity. Institutional memory must be transmitted (usually verbally) to new members of the team. Beware when it becomes inflexible and does not adapt to changing situations. The key is to harness institutional memory to derive all the benefits without any of the penalties.

Change is inevitable. We need to embrace change because there isn't a damn thing we can do to stop it. However, we need to change deliberately. We must understand how everything interconnects and determine the full range of effects any change will bring.

Unleashing Firm Wisdom

Firm Wisdom is how you capture institutional memory. You must establish a democracy of ideas where the best concepts rise to the top. It is about unleashing the powers of decentralization within highly regimented and centralized organizations. It permits

for the free flow of ideas and innovation within your organization without the limits imposed by hierarchy and departmental structure.

When properly implemented Firm Wisdom can build business-wide collaboration and information exchange. Therefore, any ideal implementation of Firm Wisdom within your business must keep all this in mind.

What if you could:

- Minimize training costs
- Eliminate repetitive questions
- Aggregate important business data
- Enable collaboration between workers
- Tap into the collective intelligence of your entire organization
- Build stronger teams
- Provide seamless communication between departments
- Gather all your best business ideas together
- Open a frank dialogue with your customers
- Build a strong business culture even across geographic divisions
- Enable key customers to provide feedback during R&D
- Convert your customers into a tribe
- Convert your customers into fanatics for your products

A Democracy of Ideas

My father always says that even the world's biggest idiot is entitled to one good idea in his lifetime. Since

you aren't an idiot you can capitalize on this idea, as long as you know about it. With Firm Wisdom, you liberate your employee's ideas into an environment where the best concepts can rise to the top. Firm Wisdom allows for everyone in your business to share their ideas and then encourages others to comment on those ideas in the hopes making them better. Think of it like the old Suggestion Box except it is digital and open to discussion.

No matter what, you must fight the manager's urge to impose order and regulations on Firm Wisdom. The idea is to tap into the wisdom of crowds^{vi} and to allow the best ideas to rise to the top. If you provide good incentives for the ideas you use, you will see a dramatic increase in the number of ideas posted.

The Powers of Decentralization

Highly regimented, top-down organizations are on their way out. Modern business requires your employees to be Knowledge Workers. This means they rely on information to make good decisions for your business. Logically, the more information they have, the better decisions they can make. Firm Wisdom allows the free flow of ideas and innovation within your organization without the limits imposed by hierarchy and departmental structure. Now people can collaborate across departments and work to improve your business.

Creating Firm Wisdom

The easiest way to get started building Firm Wisdom is to begin the tedious process of documenting everything your company does. Have each worker write out every task they perform on a daily basis and include all the steps in the process. Then you will need to document all your company policies and guidelines.

The next step calls for all this information to be available digitally to your staff. All your workers should be able to access this information and they should be able to add to it also. Now, if someone is absent from work, whoever is filling in only has to review the documents pertaining to the specific job.

As your company grows, you should eventually include some social networking technology into your Firm Wisdom system. You can create individual blogs for your workers, a Question & Answer section, links to useful articles and other Internet content. Eventually, you may even wish to open parts of your Firm Wisdom system to your valued customers so they can post their opinions and ideas for your business.

Case Studies

The two following Case Studies will serve as guides for how you can set up your own Firm Wisdom. Please understand that I have provided as much information as possible about how these businesses have developed Firm Wisdom. However, I cannot provide complete details because how these

businesses use their Firm Wisdom systems constitutes a genuine competitive advantage. Both companies will agree that Firm Wisdom gives them a significant business edge and have asked me to not reveal too much.

Case Study 1: Samole & Berger, P.A. (www.samoleberger.com)

Samole & Berger has developed a home-grown Firm Wisdom system using Corel WordPerfect and standardized document naming conventions. This South Florida law firm has created standard policies for every new client and case that enters their office. In addition, all standards are fully documented and available for employees to review on their private network. New employees are provided with all the necessary documents and are also trained by a senior member of the office staff. In competing law firms, a new employee generally requires 4-6 weeks before they are working at peak levels. A new employee of Samole & Berger is up and running efficiently within 2 weeks! Firm Wisdom gives Samole & Berger a substantial advantage in productivity and efficiency.

Case Study 2: Lynco Electric (www.lyncoelectric.com)

Since 1985, Lynco Electric has used custom computer software to track every work estimate they have ever created. This software connects into a custom inventory database. Over the years, Lynco has developed a proprietary part numbering scheme

which logically unifies equipment and materials that are normally installed together; this allows estimators to quickly learn the part numbers of all the materials. Under extreme circumstances when an estimator does not have access to a computer, they can create estimates over the telephone by dictating the part numbers and quantities to an operator at the home office.

Lynco's ability to generate quotes quickly gives them a sizeable advantage over the competition. They are able to produce actionable construction estimates within moments. This entire software system is a great example of Firm Wisdom at work. Through a single system, Lynco manages inventory, client information, quotes, job costing, invoicing, and profitability analysis. Employees can be trained quickly and start working immediately with minimal error because part numbers are grouped logically based on function. They can also quickly refer to past quotes and review customer activity for the life of the account. Firm Wisdom gives Lynco Electric a significant competitive advantage with fast turn around of work estimates and reduced error rates.

Getting Wise

Sounds great doesn't it? So much power all available to you and your workers, and all you need is Firm Wisdom. By harnessing the power of Firm Wisdom in your organization, you can unleash the collective knowledge of all your employees and maybe even your customers too. You will build a community centered on your business which will further

strengthen your brand and encourage customers to promote your products.

Now that you understand how to harness institutional memory, how to spot hidden costs and how to spend wisely, now we can tackle the next biggest tech cost.

Chapter Five: Ensuring Performance

“Those who don’t pay attention will get hurt, while those who see it early enough will get rewarded.”
-Steve Jobs

So far in this book, I have discussed several important business concepts that are necessary if you want to achieve Nearly Free IT. We have learned that machines don't matter and how to identify hidden costs. We have stopped coveting the latest and greatest and we see the benefits of Firm Wisdom.

However, now we must tackle one of the biggest information technology expenses: the computer technician. This is the chapter that will make me no friends in my business. I can just see the armies of computer geeks plotting my terrible demise.

The Break & Fix Model

We have all learned the old adage "If it ain't broke, don't fix it." Unfortunately that's how we maintain our computers. We wait until there is a problem before we call our computer technician. The tech comes over and gets to work. Meanwhile, we sit and twiddle our thumbs or try to find *other* work to do. Usually though, you just end up wandering around the office, bored to tears, trying to kill time until your computer is ready.

But what about the hidden costs? What about downtime with zero employee productivity? All of these costs are just as real as the computer

technician's invoice. Any computer failure translates directly into a costly disruption of your business. Today's connected businesses all face the same problem: the more complex your computer systems, the greater the chances of a break-down.

A few years ago we could all work without the Internet. Now, there is panic if the Internet goes down for more than a few minutes. It's hard to remember what business was like before email. The problem is not with technology, but with how we maintain our systems.

The old technology paradigm called for us to work the machine till it broke. Once it's inoperable, you call the technician who comes to the machine and tries to fix it. The technician is happy because he's billing you his hourly rate, so he has no incentive to fix your computers quickly. Many small business owners have felt the pain of paying more for computer repairs than the cost of a new machine. How terrible is it when you see the repair bill and realize you could buy a new computer for the same amount? These problems prove that the break-and -fix model is flawed.

That means you need to change your thinking on computer maintenance. It means that the old way of "reacting" to a problem is not the ideal solution anymore. It is actually costing you much, much more when you react to a problem. But what is the alternative?

A Nightmare Scenario

It's 3AM and Mike, the owner of a small law firm, felt like he'd been kicked in the stomach. Too much coffee and hours of panic were wearing him down. Steve, his computer technician had been trying to solve the problem for over six hours.



It had all started just before 9AM when an innocent looking email arrived. Unknowingly, one of Mike's employees double-clicked the attached file and unleashed a nightmare. The file released a torrent of viruses that overwhelmed the computer's anti-virus software. Within twenty minutes all the office computers went haywire, with files disappearing and computers crashing. Mike called Steve the Computer Guy, who instructed him to shut down all the company computers and servers until he could arrive to diagnose and repair the problem. After an hour of waiting for Steve, it became obvious that no work was going to get done. Mike sent everyone home and waited three hours for Steve to arrive.

Finally, 21 hours later at 6AM, Steve delivered the bad news: "I was able to clean out the viruses from all the computers. Sorry, but it looks like you lost 90% of your data files. I sure hope you have a backup. I'm going home to get some sleep. I'll fax you my invoice later."

Mike was devastated. His last backup was more than two months old. His entire business was on those computer files! Every client record, every invoice, every receipt, all his emails, everything. And most of it just vanished. Mike had to face the reality that he might have to go out of business.

Could you survive this disaster?

Cost Breakdown

The old paradigm has far too many costs associated with it, and the worst are hidden costs. Let's examine each cost in turn and try to get a better understanding of how to create a new way of working that will be more rewarding for you.

Technician Time

We are so used to paying people by the hour that we forget the inherent dangers. I will not say that all computer techs are unethical and run up their hourly billing. However, there really is no incentive for them to perform their work quickly, either, is there?

There are some technicians that charge a flat rate for repairs but they are usually just starting out. Generally, the flat fee technicians will quickly switch to an hourly billing model once they have a small base of customers. In either case, paying someone on an open-ended, hourly rate could be business suicide. What happens when your computer tech is making more money than you?

Wouldn't it be better if you knew ahead of time what was wrong and could ask for fixed fee proposals from several vendors? Do you think you could save money if you were able to request several bids for the repair of your damaged systems?

Parts & Materials

There isn't much room for change here, unfortunately. When a piece of machinery or circuitry fails, there aren't many other options. Bite the bullet and buy new gear to replace faulty parts. However, since most business owners are not computer experts, you rely solely on the technician for what needs to be replaced.

Have you ever been in the position where your technician says the problem will be fixed by replacing damaged parts? Then, you buy the new parts and the computer is still broken! There is nothing more frustrating than spending money unnecessarily. Worse still, now the technician needs to spend additional billable hours trying to diagnose the actual problem.

Wouldn't it be better if there was a way to know exactly what failed? Better still, wouldn't it be fantastic to know before it broke? Do you think you could save money if you could purchase the necessary spare parts yourself? Could you save money if you told your technician exactly what was wrong before he showed up to your place of business?

Downtime

This is the great grandfather of all hidden costs. While the technician is worrying away at the computer trying to figure out what happened, your worker is wandering around trying to find something to do. Or worse, he is sitting and chatting up the computer tech while she's trying to fix the problem.

How many hours of productivity have you lost because of computer downtime? How much work could have been done during those hours? How many more sales could have been completed? How many new clients could have been earned?

Wouldn't it be better if you could schedule downtime? Wouldn't it be better to require your tech to come and make repairs in the evenings or on weekends so you don't interrupt the flow of work?

The Preventive Maintenance Model

Preventive maintenance is a schedule of planned activity aimed at avoiding breakdowns. The goal of preventive maintenance is to stop equipment failure before it occurs. It is designed to keep equipment reliable. The long-term benefits of preventive maintenance are:

- Improved system reliability
- Decreased replacement cost
- Less downtime = more productivity
- Extends the useful life of equipment

Long-term effects and cost comparisons almost always favor preventive maintenance over performing repairs after failure.

Preventive maintenance is a strategy to avoid problems. It means you routinely service your equipment to make sure it keeps working properly. Changing the oil in your car every 3,000 miles is an example of preventive maintenance. It keeps the engine lubricated and in good working condition. If you skip the oil changes, eventually the engine seizes and the car is worthless. The same applies to all regularly scheduled maintenance.

It is impossible to dodge every problem; preventive maintenance helps you avoid the majority of failures. With timely repair, a large-scale break down can be avoided. You must perform the necessary tasks to extend the useful life of your business hardware or run the risks of costly equipment failures.

I am certain that you agree that preventive maintenance is the best way to avoid equipment failure costs. Better to spend a little every month to avoid nasty surprises. Sadly most people don't know how to maintain their computers. So, you usually leave it to your computer guy to handle the basic maintenance of all machines. The problem is that basic maintenance can take hours to run on your computer. Are you paying your computer tech to sit around and wait?

Here's a great example: Disk Defragmenter is a basic maintenance program that reorganizes your hard drive data so your computer can find it faster. Go to your Windows computer and click **Start** then **Run**. In

the text box, type *dfrg.msc* and click OK. This will launch the Disk Defragmenter utility. Now, click the **Defragment** button. Depending on the size of your hard drive and the amount of data, you could easily wait for 2-3 hours for this program to finish running! You can click the **Stop** button if you wish to end the defragmentation. You should never work on your computer while this is running. Defragmentation is just one of the time-consuming maintenance programs needed! Are you paying your computer guy to sit and stare at the hourglass?

Basic computer maintenance includes:

- anti-virus updates & scans
- spyware updates & scans
- security updates
- disk defragmentation
- network monitoring
- hard disk integrity scans
- disk cleanup
- hardware monitoring
- equipment testing
- Windows registry repairs

Chances are you aren't performing basic maintenance on your computers. It is easy to let it slide either because you just don't know how to do it, or because you think it's too expensive. Under the old paradigm, computer maintenance is very expensive. You need a dedicated expert who will oversee maintenance and babysit every step.

If you are performing basic maintenance, than *congratulations*, you are among the small percentage that do. You understand the value of protecting your

investments. However, if you are paying more than \$30 per computer per month for maintenance, then you are overpaying! Like everything else, the Cloud is changing how maintenance is performed.

Automated Maintenance

If you get the computer guy out of the equation, you can significantly reduce your costs. That means automation. There are now online services that can handle your computer maintenance over the Internet for a minimal fee per computer per month. Personally, I recommend My PC Bodyguard (www.MyPcBodyguard.com). It provides the right services at a price point that most businesses can afford.

My PC Bodyguard runs during your downtime to eliminate interruptions to your work. Weekly reports are emailed to you, explaining all the work performed so you can keep up to date. The reports are in plain English and don't require a PhD to understand.

Included Anti-Virus

My PC Bodyguard includes McAfee Total Protection in the monthly fee so you can stop paying for separate anti-virus software. The service will automatically send you anti-virus updates to keep you safe from emerging threats.

Predictive Failure

All the components inside your computer have a wealth of data published by the manufacturers. This data includes performance and environment specifications. My PC Bodyguard monitors your hardware components and checks them against these published specifications. That means My PC Bodyguard can predict the failure of your computer components! Predictive failure gives you the power to plan your downtime to avoid the aforementioned hidden costs of equipment failures.

Real Engineers

An amazing array of computer problems can be solved virtually. Almost every software glitch or Windows problem can be solved over the Internet. My PC Bodyguard has real computer engineers working to repair your problems. That means qualified computer professionals that monitor your equipment 24/7/365 from their advanced network operations center in the United States. In most cases, they will fix problems before you even notice them. You'll find out about it from the weekly monitoring report.

Take Charge

The only problem with virtual maintenance is that there is no way to *virtually* replace a broken part. While My PC Bodyguard cannot physically replace damaged components, they do tell you what needs to be replaced. Suddenly you are in the driver's seat of

your relationship with your computer technician. You can now bid out repair work and benefit from direct competition.

From the instant the computer breaks to when it is working again, you suffer lost time, productivity and money. You call your computer tech and wait for her to arrive. She arrives and begins the process of diagnosing the problem. Computer technicians are trained to "troubleshoot" a computer problem, which is really just a trial-and-error process to isolate the problem. Depending on the complexity of the problem and the qualifications of your tech, this process can take hours. Once the root problem is identified, the repairs can usually be performed in mere minutes. As usual, the hard part is not fixing the problem, it's finding it.

Now, imagine how much money you can save if you know the problems before you call the computer tech. What if you could control the costs of computer diagnosis and then only pay hourly rates for physical repairs? How much could you save on repair bills if you eliminate the diagnostic phase? Now, subtract all



that from the annual cost of My PC Bodyguard and you will know if the service is worthwhile to you and your business.

Get Proactive!

Stop reacting to computer failures! Get proactive about your computer maintenance and security and you will get more bang for your buck from your equipment investments. Stop paying hourly for computer repairs and support. My PC Bodyguard provides the power you need to stay protected and running plus it also puts you in control of your computers.

Go to MyPCBodyguard.com and signup today!

Chapter Six: The Art of Tech Spending

“In a garage somewhere, an entrepreneur is forging a bullet with your company’s name on it.”
- Gary Hamel

Either you have made it through the whole book and you are now well armed with new knowledge or you skipped ahead. Either way, this is the part of the book where I recommend lots of nearly free Cloud services. But first...

When to Spend

I don't believe in spending money just for the sake of it. Too many of my customers are either in a rush to spend money on extravagance or are so tight fisted they paralyze their business. Somewhere in the middle is smarter. I only recommend the purchase of a product or service when it:

- increases sales
- increases competitive advantage
- decreases costs

Those are the only good business reasons to spend money. Obviously these are large and open-ended criteria and virtually everything can be included. However, knowing when a purchase genuinely falls into one of these categories is critical.

When It Increases Sales

This criteria includes sales people, marketing, customer service, web sites and anything else that supports your sales efforts. Because you can measure your success (either sales go up or not), you are able to see the benefits of each expense. Any underperforming expenses should be reduced or eliminated.

WARNING!!!

Be cautious because some expenses are not as clear cut as they would seem. For example, a website that provides useful and actionable information to your prospective customers can easily be mistaken as a pure expense with insufficient returns. However, if your customers are using this information as part of their purchasing decision, it would be a mistake to eliminate the expense.

You can easily measure the importance of these harder to quantify expenses with customer surveys. Another great use of the Internet is to get feedback from your customers. Use your existing customer base and gather as much information on *how* they buy as possible. Offer them an incentive (10% discount on next order, a free gift, a free report, etc.) to fill out the survey and click the submit button. If you don't bribe them, they won't answer.

Sales people are directly responsible for their performance. A salesman either closes sales or doesn't. A graphic designer either produces top quality artwork or doesn't. There are logical and straightforward metrics that can be examined to check

productivity. Anyone that doesn't perform should either be moved into another position or fired.

When It Increases Competitive Advantage

Your business provides either a product, a service or both. Everything your employees do should be focused on facilitating the sales, fulfillment and collection process. Anything else in your company that is not focused on these goals should be outsourced. You must focus on your core competencies and farm out the rest.

What do you do better than the competition? How can you expand your lead? What do you need to do to react to changes in the economy, industry, technology and society to increase your competitive edge?

It's not enough to beat the competition. Your goal should be to annihilate them. Your goal must be to crush them totally then swoop in and pick over the carcass for any remaining valuables.

Don't be afraid to spend money on products or services that will increase your competitive advantage. More often than not, technology will be sold as a solution to sharpening your competitive edge, but you must be cautious. We all know someone that has been burned by buying into a technology. The key is to measure the true benefits for your business. That means understanding how any new gizmo will change the way you work and quantifying how it will improve things.

When It Decreases Cost

This is a no-brainer. If a product or service will help you save money then buy it immediately. The key is to examine not only direct costs but also the hidden costs. Hidden costs come in all shapes and sizes so get as much information as possible. You need to know what's involved.

Cost reduction is the holy grail for your business, especially during hard times. Always take the extra time to verify that no hidden costs will end up costing you more. After you have all the information you can make an informed decision.

Working to decrease costs is your constant goal as a business owner. Every penny of costs you cut is another penny in profit. Just don't go wild trimming costs! It is too easy to start cutting and get carried away. Focus on the areas of your business that are not related to your core competencies. Outsource whatever does not add direct value but only if you can find it cheaper.

Spend, Baby, Spend!

How you spend money is at least as important as how you make it. If you spend it faster than you make it,



you are on the road to failure (unless you can get a bailout). Spending money wisely will ensure the long term success of your business. Just remember, if you do

not absolutely need it - don't buy it.

What Your Business Needs

Obviously I cannot know everything you will need for your business. However, there are plenty of basic tools that every business needs. Below I will list some of these tools and give you recommendations based on my personal experiences.

Personal Computer

Chances are you already have a computer, but you may want a new one eventually. If you don't want to use the ideas for free computers discussed earlier in this book, and you don't mind spending money, here are some recommendations:

An updated list of all links can be found at:

www.NearlyFreeIT.com/links

Get portable

A laptop or netbook is the right choice. A desktop ties you down to a single location while a portable computer gives you maximum mobility. As with all electronic equipment, buy the best you can afford. Spend money on fast processors and lots of RAM. Most modern computers come with phenomenal hard disk space so, unless you plan on working with lots of video files, this isn't a major concern.

Netbooks

The Acer Aspire One 8.9-inch Netbook is excellent at under \$400. It features a 1.6 GHz Intel Atom N270 Processor, 1 GB RAM, 160 GB Hard Drive, Microsoft Windows XP Home, and a 1.3 Megapixel

camera. Weighing in at just 2.2 pounds it is incredibly light and easy to carry around. In order to keep it small, this netbook does not come with a CD or DVD drive but an external unit can be purchased if needed. It includes everything you need for connecting to a network through either the Ethernet port or the 802.11g wireless. On the downside, many netbooks are very small with tiny little keyboards and small screens. The Aspire 1 offers a good balance between size and price.



Acer Aspire 1 Netbook

Notebooks



Toshiba Satellite Series

Personally, I love the Toshiba Satellite series laptops with large screens. I like plenty of screen real estate to work with, but that also means my battery life is less than 1 hour. Since I am rarely in places where there

is no power outlet, this isn't a problem for me. At just under \$1000, though, it might be more than you are willing to spend. Obviously, your needs may vary. Be sure to buy a laptop that serves your needs, not just your wants.

If money is no object then do yourself a favor and buy a MacBook Pro. You will have the freedom to run any major operating system plus all the great Apple tools.

For desktop lovers

If you absolutely must have a desktop, the same advice applies. Buy the best machine you can afford at the time of purchase and spend your money on a fast processor (more GHz is better) and lots of RAM. Don't get sold on ancillary features that only exist to pad the price.

If you buy a desktop, don't forget an Uninterruptible Power Supply (or UPS) to protect your computer from power surges and outages. I recommend a UPS manufactured by American Power Conversion. A good UPS costs about \$50.



Uninterruptible Power Supply

You will also need a monitor, keyboard, mouse and other peripherals, like a printer. If possible, you may want to consider a two monitor option for your

desktop. In this configuration, you will have two monitors connected to one computer. This doubles your screen real estate and will boost your productivity by at least 30-40%. Any qualified computer tech can set you up with dual monitors.

Basic Web Package



r² computing Basic Web Package for \$25

- 1 domain name
- 25 emails
- 100 email aliases
- 100 MB web hosting

www.NearlyFreeIT.com/WebOffer

with information about your business and services, get it taken care of.

If your business doesn't have a website then you have zero credibility. The first question everyone will ask is "What is your web address?" Don't be foolish. Spend the money and get a website. Even if it is a basic brochure site

I am making a special offer to readers of this book: you can get a Basic Web Package from R-Squared Computing for \$25. This gets you a domain name, email and web hosting for 1 year. It's a no-brainer Special Offer for you just for buying this book!

Go get yours now: www.NearlyFreeIT.com/WebOffer

Domain Name

This is your .com name on the Internet. Please be aware, .com names are very hard to get. You may need to look at some of the other domain extensions like .net, .us, .cc and so forth. If you absolutely must get the .com name you want, please contact R-Squared Computing (1-800-784-8045) and we will negotiate with the current owners for you. If you decide to try and negotiate on your own, be very careful! Make sure you get all the rights to the domain name.

Web Hosting

Web hosting is your website's "space" on the Internet. Included in the Special Offer is 100 megabytes of web hosting. This is the amount of space you have available for your website. If you need more, additional space can be purchased for a reasonable price.

Email

All R-Squared Basic Web Packages come with 25 email accounts and 100 email aliases. An email alias just forwards emails to another account. For example, your primary email is *yourname@yourdomain.com* and you set up *sales@yourdomain.com* as an alias which forwards to your primary email. This gives you the appearance of a much larger company without forcing you to check multiple email accounts.

Telephone

Avoid landline telephones. Get a good cell phone with all the features you can possibly need for your business. That means spending money on a good cell phone plan. Personally, I use a Verizon Wireless XV6900^{vii} smartphone. This



Verizon Wireless XV6900

phone gives me access to my primary business email accounts, schedule, contacts and it synchronizes with my computer. Because my phone runs on Windows Mobile, I can access a large collection of software created for it online. For example, I run the Skype software on my cell phone which allows me to use the Internet to make calls. I haven't paid for a long distance call in about 2 years because of Skype.

Whatever you do, don't skimp on your smartphone's data plan. For \$50 per month, I get unlimited data from Verizon so I use my cell phone data for everything you can imagine. Using any USB mini cable, I can use my cell phone to connect my laptop to the Internet and that makes me truly mobile. Using your smartphone data plan to connect your laptop to the Internet also eliminates the need for a separate high-speed Internet connection in your office! Make sure your phone allows incoming calls while

connected to the Internet; that would be very inconvenient.

Incidentally, if you have AT&T cellular, just get an iPhone. This is easily the most revolutionary consumer electronics device ever created.

Advanced phone systems

If you want a more professional telephone system, I recommend Ring Central^{viii}. Ring Central offers you the advanced features of an expensive corporate telephone system without the costs. You can get a toll-free 800 number, an auto-attendant, multiple extensions, voicemail to e-mail services and even faxes for under \$10 per month.

Firm Wisdom

As discussed in Chapter 4, Firm Wisdom is how you record your business memory. Firm Wisdom gives you a powerful training, business development, collaboration and team building tool. Visit www.FirmWisdom.com and sign up for a free trial. This will be the best resource you ever used for your business.

PC Maintenance Service

All equipment requires routine maintenance. In Chapter 6, I talked about the importance of regular maintenance for all your computers. While nothing

can fully replace a hands-on computer technician when it comes to physical repairs, you need to take control of that relationship with a proactive PC maintenance service. For that, I recommend My PC Bodyguard^{ix}. This service eliminates the need for anti-virus and anti-spyware software while also maintaining your PC. Once you know more than your computer tech, you are in control of the relationship.

Printing

Get into the mindset that you don't need a printer. Every time I need to print a document, I simply print it as a PDF file and email it. While there are numerous online services that will convert your files to PDF, I like Bullzip's PDF Printer^x which installs as a printer on your Windows computer. When you are ready to create a PDF file, you simply print to the PDF Printer like a normal printer and it creates the file for you. By eliminating your printing, you will save money on printers, toner, ink and paper. Plus you will also be doing your part to protect the environment!

If you need to edit PDF files, check out PDF Hammer.^{xi} This free online service allows you to merge/combine files, rearrange, re-order and delete pages, lock your PDFs and more.

Scanners/Photocopier

Personally, I don't use either. If I need to scan a document or make multiple copies, I visit my local FedEx Office, formerly Kinko's. Most businesses have no need for either, but if you do, avoid the All-In-

One devices. From my experience, most of the All-In-One printer/scanner/faxes are a waste of money. They rarely do everything well and you also have the problem that when one breaks, they all break. In a pinch, I have snapped photos of a document with my cell phone's camera. Once your business reaches the point where you need these capabilities, follow my usual advice and get the best you can afford. Don't buy cheap when it is important to your business!

Fax

Ring Central offers a great fax to email service which I highly recommend. I get all my faxes via email as a PDF attachment. Traditional paper faxes are unnecessarily expensive and annoying. With the increase in junk faxes, it is frustrating waste paper and ink on other people's ads. Fax to email eliminates that nuisance cost. Incidentally, within a few years, faxes will vanish because there is no real need for them anymore. Many new start-ups don't even bother with faxes, however, it never hurts to provide multiple ways for people to contact you.

Camera

Unless you are a professional photographer, don't bother. Invest in a cell phone with good camera if you must take photos. I have used my cell phone camera to document just about everything we do for our customers. The idea is to reduce the number of devices you need to manage and buy. Spend the money on a good cell phone instead.

Software / SaaS

No matter what business you are in, you will need software to get work done. The key is to be smart about how you spend your precious dollars.

Accounting

You need a way to track your money! That means you will need accounting software of some sort. While many small business swear by Quickbooks, it can be expensive. If you are looking for a totally free basic accounting software then Microsoft Office Accounting 2009 Express^{xii} is worth a look. This product is ideal for small businesses that also want to be able to grow into a full accounting suite later on. Check it out!

If all you want is an invoicing service, check out Invoice Journal,^{xiii} a free online invoicing service. Invoice Journal lets you send professional looking invoices and also lets you review them online. You can also manage your client information and you can save your products and services for later use.

Office Suite

Personally, I recommend Zoho^{xiv} which offers a phenomenal suite of online business applications. Everything from word processing, spreadsheets, presentations and much, much more is available. Zoho eliminates the need for you to manage a complex computer infrastructure and frees you to

spend your money on getting more customers. Also, with 100,000 customers including General Electric, you know that you will be able to count on Zoho for the long term.

Email client

If you want to keep a copy of all your emails on your local computer, you will need email client software. There are countless options to choose from and Windows includes Outlook Express for free. An email client is useful if you need access to your emails when you cannot connect to the Internet. Personally, I use Microsoft Outlook as my email client but I only use it to track certain key email accounts.

Calendar / Scheduling

Whatever you use, make sure it is compatible with your cell phone! You will want to be able to synchronize your cell phone with your calendar. Zoho Business^{xv} gives you a shared calendar service for up to 10 users for free. In addition to a calendar, Zoho Business also offers email hosting, web portal creation, instant team chat and document management. The best part is that the 11th user only costs \$5 per month. As a platform for your business, Zoho gives you the right tools to get started. Under the old paradigm, equivalent services could cost a minimum of \$15,000!

If you want to allow customers to make appointments with you online, look into ClickBook^{xvi}. This product puts a **Book Now** button directly on your website

which links to the ClickBook service. It handles repeat appointments, client management, and can send email or text message reminders to your customers to reduce "no shows." You can also download appointments into any iCal compatible calendars. ClickBook is free but you have to buy credits in order to send out SMS text message reminders.

VoIP / Skype

Voice over Internet Protocol, known as VoIP, is technology that routes telephone calls over an Internet connection. Your voice is converted and transmitted as data packets via Internet Protocol (IP). Modern systems allow you to communicate with any local, long distance, cellular, or international telephone number. In addition, calls can be routed anywhere you are, as long as you are connected to your network--even if you are out of your office. The features you know from traditional phone services are also available, such as call forwarding, three-way calling, caller ID, and redial.

For long distance calls, nothing beats Skype^{xvii}. By using the Internet to route all phone calls, Skype effectively eliminates long distance calling. You can also install Skype on your smartphone and start taking advantage of this amazing service. Get your free account and learn more about this amazing Cloud tool.

Backup service

Online backup is the only option you should consider. Avoid the headaches and hassles of equipment and get Mozy Unlimited Backup^{xviii}. For \$5 per month, you get unlimited online backup that runs automatically from your home computer. If you don't want to pay, you can get 2 gigabytes of free online backup from Mozy. This is a great solution if you only want to backup your important documents, but if you want a total backup solution, spend the \$5 and sleep well at night. If you have multiple business computers you will need a Mozy Business account. I have been using Mozy for about a year and I couldn't be happier.

Project management

Basecamp^{xix} is great for online project management. If you only need to manage 1 project at a time, use the free edition of Basecamp. Whatever you do, make sure to make a note of the web address you created for your project because Basecamp isn't very good about tracking that for you. Otherwise, spend some time familiarizing yourself with all the tools available and you will be working efficiently in no time.

If you want something lighter, Mentat^{xx} is a free project sharing service that allows multiple users to share To Do lists and communicate shared projects. Users can assign tasks, make comments and close out items. Simply sign up, start a project and start inviting members to work. This service also includes support for Blackberry mobile phones, but any phone with a web browser should be able to access the service.

Constant Communications

If you are familiar with Twitter, then Status^{xxi} is instantly clear. You can use this website to connect a group of people who can constantly update each other on their activities and accomplishments. This is a private micro-blogging service that keeps your team up-to-date with constant updates and communication between all team members.

Customer Relationship Management

Free CRM^{xxii} is a web based software solution for customer relationship management and sales force automation. Free CRM is great for contact and lead tracking, sales and contact management, sales pipeline management and forecasting, customer service and business management.

Mind Mapping

Mind mapping is a method for laying out your thoughts in a flowchart format for you to better visualize connections. For digital mind mapping, check out Mindomo^{xxiii}. A basic account is free and a premium account is \$6 per month. Create and edit mind maps then share them with your colleagues or your friends. Mindomo offers you an effective plan organization, scheduling, and presentation tool.

Digital Whiteboard

Scriblink^{xxiv} allows you to draw online and share the whiteboard with whoever you invite. You can upload images, use a number of simple drawing tools, draw in countless colors and then save your work for later. Basically, this works exactly the same as a whiteboard without using ink or plastic. And it's completely free!

Presentations

Another free service, 280 Slides^{xxv} allows you to create beautiful presentations online and

Stop PowerPoint Hell!

Read Seth Godin's free ebook "Really Bad Powerpoint" at:

<http://nearlyfreeit.com/ebooks>

then present them anywhere. You can also share presentations with whomever you wish. You can upload your existing Microsoft Powerpoint presentations or download your presentations in Powerpoint format.

Document Distribution

Any document larger than 5 megabytes should not be sent via email. Because email can travel across many different computers before it reaches you, it is not a good idea to overload them with massive file attachments. While there are plenty of websites that let you send large files, Docstoc.com^{xxvi} also allows

you to search a whole collection of legal and business documents too. Forget trying to write a contract from scratch, just use Docstoc.com. You should always get legal documents reviewed by an attorney!

For an updated list of links, please visit:

www.NearlyFreeIT.com/links

Web Portfolio

If you need to provide a portfolio of your work, look at CarbonMade.^{xxvii} You can manage your online portfolio with a variety of tools that allow you to change how you display your work. The free edition allows you to store 5 projects and 35 images. The pay edition costs \$12/month and you get 50 projects, 500 images and 10 videos.

Social Web Marketing

The social web is also clumsily called Web 2.0 by the media. These are the websites like MySpace, Facebook and LinkedIn that allow business professionals to network digitally with their friends and peers around the world. If you plan on running a business, you must signup and create accounts on all the major social web sites.

The easiest way to start is at Ping.fm.^{xxviii} After you create your account, you will be able to then use Ping.fm to create accounts at all the other major social networks. Don't skip any! Take the time and fill

out all the requested information about you and your business. Once you are done, you can then use Ping.fm to update all your social sites with news and other information about your business. Used wisely, Ping.fm can be an invaluable tool to help you market your business. At the very least it gives you more places to shout your marketing message.

Once you are on LinkedIn, feel free to send me a networking Invitation. My LinkedIn email address is louis@r2computing.com.

Banking

You should keep your business accounts separate from your personal accounts for all kinds of reasons. Obviously, you should speak to an accountant, but suffice it to say, it makes life much easier if you keep them separate. I recommend opening an account with a local bank where you can start building solid relationships with the bank officers. This will make it much easier on you if you ever need to negotiate for a business loan or line of credit. Otherwise, you should look for a bank that offers free checking and electronic Internet banking. Ideally, the Internet banking should be able to communicate with your accounting software. This reduces your workload significantly!

Internet Access

If you only have one computer then by all means, try to avoid spending money on an Internet connection! There are countless resources available for free

Internet. For a complete listing and map of free Internet hotspots, check out WeFi.com^{xxix}.

Computer Network

If you have more than one computer, you should get a network. A network allows you to share network resources including high-speed Internet, printers and security. For a network, you need a network switch or wireless networking router. You can buy any of these at your local computer store and you can even get help installing them too. If you have more than 25 computers, you really need to have a professionally designed network. Contact me for your network design at 1-800-784-8045.

Whatever Else

It is impossible in any book to list every possible variation of technologies in use in modern business. I have provided you with a list of the basic products and services most businesses need. If you have a specific need that I have not discussed in this chapter, feel free to email me and I will be happy to help you.

You can email me directly at: louis@nearlyfreeit.com.

Chapter Seven: Get Your Head in the Cloud

“What do you do when your competition’s drowning?
Get a live hose and stick it in his mouth.”
-Ray Kroc

We've come to the end of our journey into the Cloud. Hopefully, you have the information you need to get started with Nearly Free IT for your small business. By harnessing the powerful tools available online, you can now virtually eliminate all your information technology expenses without sacrificing the tools you need to succeed.

While the economy collapses around us, your business can become leaner, more profitable and better informed than the competition. When the business giants are hurting, you have an incredible opportunity to steal market share and grow your business. But you better make sure you have the right tools to delight your customers.

We've learned a great deal in this book, but the most important points to remember are:

1. Computing is a Utility

You need to shift your mindset to fully benefit from the Cloud Paradigm. How you think about technology and equipment will directly impact your bottom line. Machines don't matter. Soon computers will be disposable and everywhere.

2. Newer Isn't Better

Stop gadget fever! Focus on getting the tools you need without hidden costs you don't. Control your human urge to make emotional decisions.

3. Understanding Free

Understand hidden costs and you will be able to make better purchasing decisions. Everything costs something. There ain't no such thing as a free lunch.

4. Build Firm Wisdom

Capture the collected knowledge of your company. Dramatically reduce training costs and the time it takes new employees to become fully productive.

5. Ensure Performance

The break and fix model of computer maintenance is broken! Too many hidden costs make it the worst possible strategy for PC maintenance. Control your maintenance costs with online services that fit your small business budgets. Preventative maintenance puts you in charge.

6. The Art of Spending

I left the best for last. Here is where I list some amazing business tools I have found on the Internet. And most of them are free! For an updated list of recommended services, visit www.NearlyFreeIT.com/links.

The Only Constant

The only constant is change. Get used to it. Change will be coming faster and faster in the Information Age. The Cloud is just the latest development. Soon we will enjoy technological changes that no one could have ever predicted. We are entering into an exciting time where our understanding of the universe is allowing us to make some amazing technological leaps. You better keep up.

Join the Conversation

Please join me at NearlyFreeIT.com and get involved in the web forums. I am always interested in hearing how people are using the ideas in this book. I want to know about your successes and even your troubles. Sign up for free and join the conversation. I look forward to hearing from you.

Get Going

What are you still doing reading this book? Get online and start using these amazing tools to benefit your business. If you have any suggestions for other services, please feel free to submit them to me at www.NearlyFreeIT.com/submissions.

Also, I want to hear how you are using these tools to work smarter. I am always interested in success stories.

Send me an email with details:
louis@nearlyfreeit.com.

Resources: More Tools You Can Use

Reading this book was just the beginning. There are several resources available for you online at my website NearlyFreeIT.com. Some of the valuable tools you can use to help you get more out of your technology are highlighted below:

The R-Squared Method Blog

Get free insights three times a week just by signing up to receive updates. Keep the ideas in this book fresh in your mind. Visit <http://r2computing.blogspot.com>

Personal Strategy Coaching

Lou Rosas-Guyon and his team are always available to help you get more out of technology and to achieve your goals. There are only a limited number of personal coaching opportunities. If you are interested in applying for this elite program, please complete the online application at www.LouRG.com.

Nearly Free IT Seminars

Lou Rosas-Guyon is happy to conduct seminars and workshops anywhere in the world. Please visit www.LouRG.com to book Lou.

Speaking Engagements

Lou is available as a keynote speaker for groups of all sizes. Details are available at www.LouRG.com.

About the Author

In 1984 my father brought home an Apple IIe computer. Dad worked for NASA during the Gemini and Apollo programs so he knew that computers were poised to revolutionize the world. His prescience (and money) purchased my first computer, and once he was at work the next day, I promptly took the entire thing apart! Incidentally, he'll find out about that when he reads this. Sorry Dad.



Amazingly the computer went back together again and worked without a hitch; call it beginner's luck. That computer opened up a world of new ideas, new languages and a future career. I learned FORTRAN and BASIC, I played Zork and Taipan, and I did it all without a hard drive. In history they talk about great turning points, well that computer was certainly mine.

From there it's pretty standard stuff: schools, work, marriage and children. In my first job I worked with computers in the construction industry, drawing building plans in AutoCAD. That led me into a job developing a three-dimensional Computer Aided Design & Manufacturing software at Deneba Software. I then sold that same software to the Fortune 1000, the government and the military. Those were heady and fun times when a multi-million dollar company gave the reigns to a small, dedicated

team of Young Turks and let us develop a fantastic product.

From there I was hired away by InnTECH to manage the development of their Internet video streaming technology with a team of programmers scattered across the globe. It was exciting work, funded by the hysteria of venture capital during the great Internet Boom of the 1990's.

Finally, in the winter of 1999, exhausted from countless late evenings, my closest collaborator and friend, Alex Rodriguez said the words that would change my life forever. "We're always talking about how we could do things better. Let's put our money where our mouths are!" proclaimed Alex one evening in the parking lot. "If we're so damn smart, let's prove it." And that is exactly what we have been doing ever since. What started as a small IT consulting firm, R-Squared Computing has grown into a respected practice. We specialize in the development of amazing solutions for a fraction of the usual cost. From our first sale, I have never stopped believing that I made the right choice for my life. I like fixing problems, and I am good at it.

For more information, please visit
www.LouRG.com

Appendix: Hiring Technology Consultants

Eventually your business will get to the point where you need to bring in some outside help. Spending too much of your time managing your business computers is not a wise use of your time. This is when you need to look into hiring a computer consultant.

A consultant is really just an expert in a specific field. These are the specialists of the business world that hire themselves out by the hour. For example, a lawyer ensures that your contracts and other legal agreements are fair and don't have any hidden surprises. Accountants make sure you keep as much of your hard earned money as possible. Hiring an expert is always better than trying to do everything yourself.

When it comes to technology, it gets more complicated. As opposed to lawyers and accountants (which are well regulated industries), computer consultants don't have the equivalent of a Bar Association. Unfortunately, the only thing that you need to do to become a computer consultant is to advertise. There are several different certification classes that are offered but these tend to be manufacturer specific. So, a Microsoft Certified technician has only really been tested in Microsoft products. Also, most manufacturers offer excellent incentive programs to encourage technicians to sell their products.

I have seen far too many cases where a certified technician tries to force a match between a customer's needs and their manufacturer's products. As you have already figured out, these never work well and usually create more problems than they solve. If the consultant had just taken the time to understand the real needs of the business a proper solution could have been designed.

You need a computer consultant that can help you make your business better. You want a partner that can help you make wise technology decisions that aren't prejudiced by some allegiance to a specific manufacturer. More importantly, you want someone credible that will help you achieve your business goals. You don't want someone that is just trying to sell you a product. You need someone that will examine and understand your needs before designing a solution.

Finding Credibility

The only currency in the world that has any real value is credibility. Use the Internet and research local computer consultants. Ask people you trust for recommendations for a technology consultant. Your lawyer and accountant might be able to point you in the right direction. Don't just open the Yellow Pages and pick the first name you see. Start building a list of potential candidates, as if you were hiring them for a full time job. You will want to build a list of no more than 5 to 10 names.

Now, do some homework. Read Internet articles they've written and see if they make sense. Are they

knowledgeable and capable? Do they use excessive tech jargon? What do other people say about them online? Check out your list of computer consultants on social networking websites like LinkedIn and Facebook. You are trying to narrow your list to the top 3 candidates that you will invite for an interview.

Interviews

Here are some interview questions for your potential computer consultant:

1. Are you a technician or a salesman?
2. How many technicians do you have on staff?
3. Do I get a dedicated technician or will I see someone different every time?
4. Who do I call if I have a problem?
5. How many years of experience does your average technician have?
6. What is the average size of your current customers?
7. Can you provide me with customer references?
8. Do you specialize in any industry?
9. What is your hourly rate?
10. Do you have an hourly minimum for office visits?
11. Do you charge extra to work evenings and weekends?
12. What is your average response time?

Now, here are some questions to ask yourself:

1. Is this computer tech genuinely interested in working with me to make my business better, or is he just trying to sell me something expensive?
2. Does he understand my industry?

3. Did he actually listen to me?
4. Did he ask good questions about my business and goals?
5. Do I like and trust him?

The whole point of the interview is to determine if this person is credible. Based on the interviews you should be able to narrow down your choice to the winning candidate.

Traps to Avoid

We've all heard the horror stories about terrible computer consultants: the maniac that curses and insults everyone or the invisible consultant that only appears to present his invoice. From my experience, businesses commonly fall into one of these five costly traps when hiring a consultant. These simple, common sense strategies can help ensure that you avoid the most common pitfalls associated with hiring a consultant.

Trap 1: Selecting a Consultant Without Expertise

Knowing computers is one thing. Knowing the particular area of business technology needed to solve your business problems is another. The interaction of software, hardware, networks and operating systems has become so complex that a lot of times you know you have a problem but you don't know where. All the more reason to take more time laying the groundwork with interviews. You need to find someone with the right set of skills to address your business problems. Also, your tech should

ideally have experience in your industry. Logically, the solutions used in the pharmaceutical industry might not necessarily adapt well to manufacturing.

In addition to technical and industry expertise, a consultant will also be well versed in applicable laws and regulations governing your industry. I remember working with a client who was violating several federal laws simply because their previous computer techs were negligent. As quickly as technology evolves, so do the laws and regulations that govern your industry. Make sure your consultant is knowledgeable on all areas related to your business.

Trap 2: Selecting a Consultant Without People Skills

Your computer tech must have skills that go beyond the technical, into the realm of communication and training. In your interviews with consultants, find out which ones exhibit a real interest in solving the problems of your company. Avoid the consultant who shows resentment at speaking with your staff. You'll have problems down the road when they need technical assistance.

Consultants with an attitude can create havoc with your business. They will try to control how you run your business, or they will do something and not tell you what they have done. Then when something goes wrong you are forced to find them. A technician is there to make your life better, not worse.

Trap 3: Letting the Consultant Take Control

Unchecked, the computer consultant will likely

develop a "solution" that only solves his cash flow problems. Give specific instructions. Establish milestones with clearly stated goals. Develop metrics to measure success or failure. Follow these simple rules, and you will avoid a common trap: giving the consultant too much free rein.

The first step is to plan out what you need before interviewing consultants. Get the big picture. Then fill it in, one small job at a time. Many managers resist taking time out of their day to figure this out. When you understand what your problems are, you can better explain it to the technician. Set out what you want in plain English. Say what you want to accomplish and let the consultant translate it into what the systems should do. Although something will be lost in the translation, your goal is to keep surprises to a minimum.

If you have no idea what's wrong, then ask your expert to prepare a simple document outline a strategy to identify the root problems. If the document you receive is overly laden with jargon and industry terms, have them rewrite it in plain English. Remember, jargon is used to disguise meaning. If they cannot explain it in simple language than look for someone else.

Trap 4: Agreeing to Begin Work Without a Contract

The last thing you want to do is go into a business arrangement with a consultant without a contract. "Contracts are the best way to avoid misunderstandings," says law professor Wendy Wallberg. "A contract serves to minimize the risk to

both parties. But be careful. If your consultant presents you with a contract full of legalese you better contact your attorney."

In general, a good contract for consultant services does not have to be long or cumbersome. These contracts should spell out the services that the consultant will provide and the agreed upon fee. If there is anything missing, be sure to get it added in before you sign.

You want to avoid coming to the end of the project and being disappointed. You may say, "it doesn't do X, which is critical," and the consultant will say, "when did we talk about it doing X?" A well written and thought out contract will ensure that these issues are all settled beforehand. Remember, a contract serves to protect all parties involved in the transaction.

Trap 5: Be Sure You Trust Your Consultant

If you follow these steps you will go a long way toward sidestepping the most common and costly traps when hiring a computer consultant. But there is one final, major hurdle to overcome. Never forget that the consultant has access to all your company data. Can you trust this person?

"Most horror stories derive from a breach in one of two kinds of trust," says Professor Wallberg. "The first is ability and the second is attitude." An untrustworthy person can create havoc with your business. Don't hire any technician you don't trust as a human being. Trust your instincts, unless you have a long history of trusting the wrong people! If you do not think you can

trust your computer tech then save yourself a mountain of grief and hire someone else.

Document Everything

You should absolutely require your computer consultant to document every last bit of work he performs for you. That means you should be given reports of all the work he does, computers he configures, changes he makes. All his work should be written down and sent to you for your records. Every password, computer name, setting, configuration, everything; no matter how cryptic, should be written out for you.

Why? So that if your technician disappears (or you decide to fire him), you can just hand over the documents to the next computer consultant. Now, she can pick up exactly where he left off without skipping a beat. There is nothing worse than walking into a new customer's offices with no idea how anything is set up. That means I have to work billable hours tracing setups and configurations; I have to teach myself how everything works. That is a waste of my time and your money.

Incidentally, every technician will complain about documentation. No one likes to do it because it is time consuming. However, you must insist on it. You should work it into the contract too. I promise you, it will be worth the aggravation. Get everything documented!

For additional information, please visit:
www.r2computing.com

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