ADOPTING, USING AND DISCARDING TECHNOLOGY

Recognizing, selecting, timing and implementing the right ones

The timing of technology can be critical. Being too early or too late each has drawbacks. Recognizing and selecting from choices is important. We will explore some of the issues to consider. Although a subject that no doubt has had an impact for eons, rapidly escalating technological change makes it more and more important with each and every passing day. Here are a few things to think about. Our discussion will center on the technology that each of us needs and uses, but also on the technology that we make and provide to others. We believe those without a technical background will also find this to be of interest.

The grandfather next door

My interest in technology began almost at birth. Among other things, I have a childhood recollection of a 90-plus-year old grandfather who lived next door to my grandparents with his daughter and son-in-law. This kindly old gentleman seemed to be the talk of the neighborhood since he had retired many years before when he was only 46 years old. This was quite a rarity in those days. Although he always seemed quite busy, no one seemed to know what he did with his time. All they knew was that before retiring, he had owned a thriving harness business. Whether through dumb luck or good planning, he sold his business right before the advent of the automobile had a chance to dramatically reduce the demand for his products.

The buyer did not have the same insight or good fortune. He was out of business after a few years of declining revenues. Had the new owner recognized how the automobile would turn from curiosity to a major factor in transportation and the life of every individual, the harness business would have gone unsold. The grandfather was fortunate. He died at 96 after being retired for over half his life.

It is difficult to be right all the time. What is important is increasing the odds in one's favor. Recognizing new business opportunities, and those that are in the declining part of their product life cycles, takes careful, constant study. We recommend making technology planning a regular part of business activities for any company whose products and services can be impacted by new technology. The same is true for operations. We doubt if there are many companies that won't be impacted in one way or another either as sellers or users of technology. Either role can have a major impact on a business and its survival through a direct impact on the bottom line. Too many of us think of computer systems when we think of technology. Sure they are facilitators, but technology is all around us and manifests itself in more and more diverse ways. Technology is revolutionizing our society, improving our way of doing things, and increasing quality and efficiencies in our lives.

Confessions of a software developer

Have you ever wondered about the numbering of software releases? Do you know the significant differences between Version 2.0 and 2.01 and 2.10 and 2.15? These numbers can warn of impending or potential problems.

First of all, numbers like 1.0, 2.0, 3.0, and so on, represent major upgrades or revisions. Ones like 2.01 indicate interim releases between reissues and usually provide corrections of programming problems (bug fixes). Version 2.10 indicates enhancements, i.e., improvements to version 2.0X. The changes may be worthwhile to some or all users, but they are not as extensive as changes would be when going from 2.X to 3.0.

Some software developers do a better job than others. It is probably pretty obvious, but someone we know admits that his company never puts enough resources into catching every likely problem before releasing new software. Not that they do not care, but it is difficult for them to duplicate every user's operating environment and conditions during their testing. Also, their developers are always under intense pressure to get product out the door and start making money for the company and solving customer requests before hungry competitors can do it first. This means that customers are expected to find any problems. This can prove costly for users. Troubleshooting is expensive because it is time-

consuming and disrupts operations. Consequently, we recommend that users upgrade only when the benefits will outweigh the costs and the aggravation.

Hardware, too, goes through an evolutionary process. Manufacturers use different ways to track design and manufacturing changes. Sometimes it is done by serial number. Each serial number is associated with a specific bill of materials and design configuration. When software is shipped with hardware, the software type and version number will be recorded with a detailed description of the product, as-shipped. This recordkeeping enables manufacturers to determine the potential extent of problems if customers call to complain. From their records, they know how many of each configuration has been sold including ones likely to have a problem. In some cases, they can be proactive in fixing problems before they occur when they know who has a potentially defective item.

Be careful before upgrading.

Marketing is great. It builds product demand. We can even entice specific customers to buy who are likely to need something. Although this is one of the jobs that we do, we still prefer having customers buy for the right reasons. Unfortunately, we know that this is not always the case. Some users buy everything that comes along whether they need it or not. Some never get around to using what they buy. If they subscribe to automatic software upgrades, they don't think twice before attempting to load their new software. Here, too, there are risks. Programs stop working. Time is lost and troubleshooting is expensive.

When upgrading is the right thing to do, be sure to back up files and avoid making changes before first completing critical work that uses your system. No business needs an emergency of its own making. Read accompanying documentation to assure that your system is compatible, consider possible pitfalls and understand the expected value that enhancements included in the latest software release will have.

Compatibility issues, cross-platform considerations, system requirements and backward compatibility

Users experience problems when they attempt to use software in ways that differ from design intent or when there are bugs due to programming errors and omissions. Software that has cross-platform compatibility means that it will work on systems having various different operating software and types of hardware. For example, it may work on Windows 98 and above, but not Windows 95 or 3.11 and below. There may also be minimum system requirements for memory, processor types, operating speeds, and storage (disk) space. Be careful to check and make sure that minimum requirements have not change from one software version to another. Your system may no longer be compatible and hardware upgrades may be necessary. Sometimes, adding memory or other simple changes are sufficient. Other times, a completely new machine will be more cost-effective. Be careful not to buy something that, although better than what you have, is nearing the end of its product life cycle and soon will be superseded by completely new technology.

Users sharing files with other users need to be especially careful and recognize potential problems before the fact. Backward compatibility means that new software will work with files created using earlier software versions. Usually there are limitations and backward compatibility may only apply to more recent issues. Files created with newer versions will not work with older software. It is important to check and compare parameters before attempting to share files with other users. Testing is always a good idea. In some cases, others may need to make their own upgrades before they can read your files. Coordinate changes before making your own.

If your company has an IT department, they should manage changes for you and decide when the time is right. The downside is that you will have limited control over if and when changes are to be made.

Why and when to upgrade. It's not just computers and software either.

When the decision is under your control, make it an informed one. Many changes can be made that are fairly small and incremental. They still add value and make a difference. The costs and risks are not always significant, but neither are the expected benefits. From time to time, there are major paradigm shifts. Knowing how to recognize new things that are coming along can avoid getting stuck with too much old technology. Still, if something is needed right now, it may not pay to wait. Get it, use it, and move on

to the new when it becomes available. It may also pay to start up the learning curve with a new technology, testing it to determine how it will best support a business and its needs. The important thing is making informed decisions.

Understand pros and cons; estimate costs and benefits; look for others who have gotten there first. Too often there can be problems, some more serious than others, when rushing into something without all fhe facts or expecting more than technology can deliver. Prepare for the unexpected and be glad when things go smoothly. Although there usually is a small likelihood that things will go wrong, it can happen. Be especially careful with people and companies that have burned you in the past or have that reputation. Finally, if you cannot see any valid reason for making a change, don't do it. If you look for trouble, you may just find it. Also, do you want to be one of those early-adopters who find the bugs and have them fixed for everyone else especially if you do not really need it? Maybe there are compelling reasons, e.g., a must-have feature that has been needed for a long time. Still, if possible, wait until testing is complete and corrections have been made.

Move on to the hard stuff, interact better with others by collaborating.

Until now we have been reflecting more on the individual and the decisions they face on a personal, standalone basis. They are indicative of processes that we use to do many things. There have been plenty of ways to improve our personal productivity. However, what about the interaction of the individual with others? Working with others takes productivity to a new, higher level. More and more systems must interact and duplication of data continues to be reduced and enhanced for everyone's benefit. The 24x7, anywhere, anytime mentality has become the norm for greater accessibility. Smart agents facilitate self-service for timelier resolution of problems and answers to questions.

Stay flexible and assure individual choices.

We all have a personal style. We may get to the same end point, but we have different ways of getting there. Similarly software packages provide and support different ways of doing things. We can use smart keys, icons, dropdown menus, and so on. We are starting to talk to our computers and they are anticipating our next move based on what we have been doing. Choices like these enhance rather than stifle creativity. As greater levels of collaboration need to be supported, new preferences must be recognized as we add layers of interaction.

Thinking out of the box.

To a large extent we are products of our environment. Our technology environment is a growing part of our personal and business lives. The past impacts and shapes our future and spotting trends helps us to plan and expect what is to come. If your organization would benefit from turning science fiction into reality, we are available to help stimulate the creative juices to improve operations and the products and services it provides. We help to generate new ideas, provide second opinions, and recognize when and how to introduce changes that enhance productivity and value to the customers that each of us have irregardless of our roles and responsibilities. We can help when an automobile comes along to supplant your "harness" or to introduce new technologies into your business to increase security and control costs.

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