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WHAT'S HOT & WHAT'S NOT IN INFORMATION TECHNOLOGY

by Christopher J. Leach, CPA

Chris Leach is a sole practitioner and a member of the AICPA Information Technology Executive Committee. In this Alert, he discusses the in's and out's of information technology after his recent visit to COMDEX.

Nothing in America is changing as fast as information and office technology. But actual change in American business happens at a much slower rate. Each year the major players in information technology along with scores of rising stars meet in Las Vegas to form the largest trade show in the world called COMDEX. This trade show is an international event attended by over 125,000 guests and conference attendees from as far away as Russia, India and the Far East. For one week, buyers and end users have a unique opportunity to view the latest in technology. The questions to raise then become what is really needed in your business today, which technologies are in an embryonic stage, and which are just the latest "fad" in an ever-changing market.

In order to evaluate *what's hot and what's not* in technology, let me give you a few of the most current statistics available. Year after year, the typical company has invested as much as 8% of its revenues in telecommunication, computer hardware, software and related high-tech gear. Information technology eats up a growing share of corporate spending accounting for over 14% of existing U.S. capital investment as of the end of 1992 — vs. a mere 8% in 1980 (*Fortune Special Issue*, Fall 1993, page 15). Worldwide outlays for computer technology alone now total \$350 billion a year according to a recent estimate by the U.S. Chamber of Commerce, yet productivity has barely budged. Some of this investment has been in technology that did not pay off, but the majority of this investment was needed just to keep pace with other competitors. Their main return on investment has been survival.

Enough of the facts — let's turn our attention to the latest developments in information technology as we explore *what's hot and what's not*. For purposes of this Alert I have divided this topic into three areas: software, hardware, and peripherals.

Software

This is the "stuff" that interfaces with the hardware and you. With any discussion, the trend is first to ask whether you want to talk about DOS or Windows. "I was a heavy-duty DOS user," says John Andrews. "But once you switch to Windows you never go back." (*PC World*, December 1993, page 159) Many software developers are no longer developing applications for DOS or placing any new enhancements for DOS on the back burner. The end user is far more comfortable with the graphical user interface (GUI), first pioneered by Apple Computer, than with a character based system like DOS. For many computer users, Windows 3.1 is the tool of choice for a GUI interface. Let's take a look at some of the applications that take advantage of Windows and its user access.

WordPerfect and Word for Windows continue to lead the battle for word processing. WordPerfect has won the word processing category as the best word processor since 1986 — the longest string of victories by any company says *PC Week* magazine (December 1993, page 287). I would watch to see the gap between WordPerfect and Word to be even closer in 1994 as both companies offer special pricing for

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users of the competitive product to entice them to switch. Watch also for Ami Pro by Lotus Development to give both WordPerfect and Word a run for their money.

In the area of spreadsheets, Microsoft's Excel outpaces its competitors. Lotus, whose popular spreadsheet Lotus 1-2-3 set the pace ten years ago, failed to get on the GUI bandwagon early and has failed to catch up. However, there are still a lot of 1-2-3 users who remain loyal to Lotus. Keep your eye on WordPerfect's Quattro Pro (formerly Borland's) which has been making good inroads to the spreadsheet environment.

In the database arena, Access by Microsoft and Paradox for Windows by Borland run neck and neck in the areas of ease and flexibility. The Paradox version for DOS has been slipping among users that I have spoken with because it has not been receiving as much support as the version for Windows. The early pioneer in this area, dBase has failed to keep pace with the competition.

Desktop Publishing is one of the hottest areas and the war is raging. I include presentation-type software under this topic as well. Color, sound, and clarity are the threesome causing all the commotion in the desktop publishing arena. PageMager by Aldus is far and above the leader in applying all of the elements needed for a superior presentation or graphic layout. Users can add sound and even movement (like animation) to their graphics. Microsoft and Ventura Publisher give the industry leader a real challenge, however.

Hardware

If one word could be given to describe the latest trends in hardware it would be *SIZE*. The first "portable" computer developed by Compaq about eight years ago weighed over 30 pounds. We used to call it the sewing machine. Today notebooks weigh in at six pounds and are getting smaller. This year the palm top computers made their major debut. Leading the pack was Apple Corporation's "Newton," but IBM, AT&T and others had their models to show. While this is a truly "hot" technology, I feel that it is perhaps a bleeding edge technology. This is to say that given 12-18 months this technology will have time to mature and standardize. I wouldn't rush out and buy one yet.

Five areas to keep your eyes on in the up-coming months are: Wireless Networks, Personal Communications Services (PCS), Electronic Imaging, Client-Server Networks and CD-ROMs.

A wireless network will provide a quicker and inexpensive way to network a large area or even a network in a different building. Basically, the data will travel on infrared waves to a collector for routing and processing. If the wave is interrupted by an employee, bird or traffic passing between the sender and receiver, the receiver will simply request that the data or other information be re-sent. Remember this is happening at the speed of light. This technology is already in wide use in many of our homes today — don't tell me you've never misplaced your remote? Progress is being made in this area and standards are being adopted. Now we just need the price to come down.

I predict that in the near future we will no longer have a separate telephone number for our homes and offices; rather we will have a personal telephone number that will reach us wherever we are. Cellular phones are everywhere. Our current cellular system has about ten million subscribers, with thousands of new subscribers signing on each month. PCS will go light years beyond those figures, bringing portable communications to not only the mobile executive, but also to the student, and homemaker. It is estimated that some 56 million PCS subscribers will be hooked up by the turn of the century. (*Mobile Office*, November 1993, page 60)

Strides being made in modems are mind-boggling. Remember when we thought that a modem costing \$300 that operated at 300bps was great? Today it is hard to find a modem that doesn't integrate fax capabilities, and operate over three times faster for under \$200. Many employees will be able to set up shop at home and telecommute to the office. This will enable many companies to keep fancy office overhead low and give the employee the flexibility of spending more time with their family.

Have you ever seen the notice on your tax form that says "Paperwork Reduction Act" and then receive your Federal tax return only to find that it will require two men to carry it to the post office for mailing? I may be exaggerating a bit, but this does not change the fact that we live in a world where information is being created and stored at a geometric rate. The court system, the IRS and others require that these records and documents be stored for as much as ten years! Storage and upkeep of these records is not cheap. A few years ago, the accounting firm I worked for decided it was time to look at alternatives to our storage problems. At that time we used a microfilm storage process. At that time, I looked at two systems at COMDEX (and there were NO others) that would take a document such as an income tax return, scan it (or digitize it) to a PC where it could then be indexed and stored on a mass storage media such as a CD-ROM for future retrieval. The technology existed and worked. The end result was that a user could call up a particular document from his workstation and view or print the document in a matter of seconds. The price was a mere \$60,000 for the "entry level" model.

At COMDEX this year, I saw six different vendors (and I am sure that there were others) who had entry level systems starting at \$7,000! This is a technology whose time has come. If you have a need to store and retrieve large volumes of documents I would invest a little time and determine which system would work best in your work environment. I would caution you however, some courts do not allow scanned documents as evidence and may require you to produce the original document or contract. This is because once a document has been digitized it can be manipulated without a trace or trail.

The area of Client-Server Computing has become a buzzword in today's technology dictionary. Before the advent of PCs, all processing was done on a central processing unit or CPU. The workstations were data entry stations only. With the PC, processing was done at the workstation and stored either on diskette or hard drive. This process became known as distributed processing. Now, it would appear that we have come full circle in a client-server environment. The client or PC workstation is served by the file server or other type of computer (e.g., mainframe, or minicomputer). These servers may be a fax server, whose function is to send, receive and route faxes for the network; modem server, whose function is to route modem traffic on the network; or perhaps a database server. Client-server networks attempt to reduce the inefficiency of LAN servers sending large amounts of information to and from workstations. Under the client-server method all processing is done at the server, and only results are sent to the workstation. A well designed client-server system allows faster response at each workstation, and reduces the amount of traffic on the network. Costs of this technology are still high, but are beginning a downward trend.

CD-ROM, or compact disc, read-only memory, is a classic case of a new technology that is becoming indispensable in American business. The same medium that holds music can hold huge amounts of data. More than a quarter-million pages of text can be stored on a single CD-ROM. It is the ideal medium for storage of slowly changing data — like the Internal Revenue Code, or historical data — like an encyclopedia. There have already been advances in CD-ROM technology. The latest improvement manufacturers offer is a double speed or "double spin" machine. This technology enhances the drive's speed. As is typical with new products, the price has fallen as sales climb.

In 1991, 1.4 million CD-ROM drives were sold. By 1992, the number had grown to 2.5 million. 1993 estimated sales are nearly 6.3 million. By the end of 1994 the CD-ROM drive will be as valuable as the diskette for data storage and retrieval. (Disk/Trend Inc., Mountain View, CA as quoted in *PC Today*, Issue PCT3, page 23)

Peripherals

This area refers to printers and other types of office technology not directly attached to a PC.

When I told my Dad I bought a plain paper fax for the office he looked at me and said, "What, you couldn't afford a fancy one?" Fax technology has continued to make great strides. The first plain paper fax machines cost well over \$2,000. Now there are models under \$1,000. If you are really the thrifty type, your laser printer can be turned into a fax printer. As I already mentioned, fax-modems are affordable and available.

Printers have changed over the years too. Color is now an affordable option for every business owner. There are ink jet printers that will do transparencies or paper for under \$600. For a higher quality color output the color laser printers continue to decline in price. Many companies have only one dot matrix printer which is rarely used. Software products like WYSIWYG (what you see is what you get) and other printer drivers allow the laser printer to produce spread sheets and other output. If your budget is tight, consider a 24-pin high quality dot matrix printer that will provide a near letter quality print job as well as print multipart forms.

PCMCIA cards are the true blessing to the computer users. These credit card size cards allow for options to be added to the notebook computer. There are Type II and Type III cards. These cards allow for options such as fax/modems, network interface cards (NIC) and even an additional hard drive to be added to the system. This peripheral makes any notebook computer with this type of slot an expandable and adaptable machine. Add a passive or active matrix color display and the notebook becomes a good workhorse. The active matrix display provides for a sharper resolution and more colors for a higher price. The decision to add an active matrix screen should be based on its intended use. If the notebook will be used often in the field in front of clients or prospective clients, the dividend of a polished, professional presentation will be worth the price.

Etcetera

Service for your equipment has radically changed over the last decade. Remember when a service call produced someone carrying a toolbox and a selection of replacement parts? Cost and equipment reliability has changed this scenario. Compaq offers a three year out-of-the-box warranty on its new PC line. Dell Computers offers a 24-hour 800 telephone customer support number. That's just in case it's 2:00 A.M. and the report due at the 9:00 A.M. meeting is somewhere on your hard drive and you need help. Innovators like Compaq and Dell are setting the pace that other industry competitors will have to follow in order to stay in the game. The users are the winners. Not only is the hardware more reliable, but the support is enhanced.

Even the greatest systems and software won't make your company richer, your employees more productive or your customers happier. It's not how much processing power your business has, it's how well your business process works. When it comes to information technology, errors usually seem to be a matter of too much or too little. Some business owners try to automate too much of their business and then end up spending too much of their time running the computers. Who's running the business? Another common mistake is spending too little on technology — cutting corners on hardware or software. Then frustration sets in because the system doesn't perform up to expectation or need. Then more times than not, the equipment ends up gathering dust in a back room and the business owner vowing not ever to automate.

The only thing consistent in technology is change. This coupled with the fact that we are now players in a global economy mandate smarter and quicker business decisions. Technology should not run your business. You do that. However, you should use information technology as a tool to ensure your continued survival and success.

This Alert has explored the new and emerging information technologies. In a few months the list will be different—quite different. To stay current in this field, requires time and effort, and the Information Technology Section will be there to help you through this maze.