RANDOM THOUGHTS
Communications With A Purpose

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Zoho for Your SOHO: Restive in Redmond

You're probably familiar with Google Documents (word processor, spreadsheet, presentations). This is an application that raises blood pressure at Microsoft because it competes with Word, Excel, and Powerpoint. You may not have heard of Zoho, which also competes with Microsoft, but on a broader front. Zoho adds project management, customer relations management, a wiki application, and more.

Zoho, created in 2005, is a subsidiary of AdventNet, which was founded in 1996 to create "affordable software for businesses". For a company such as this to challenge Microsoft is ironic.

When Microsoft got started, it was little more than a garage operation and it came from nowhere to challenge IBM for supremacy. Now that Microsoft is king of the hill, another startup is challenging it. But the irony goes beyond that.

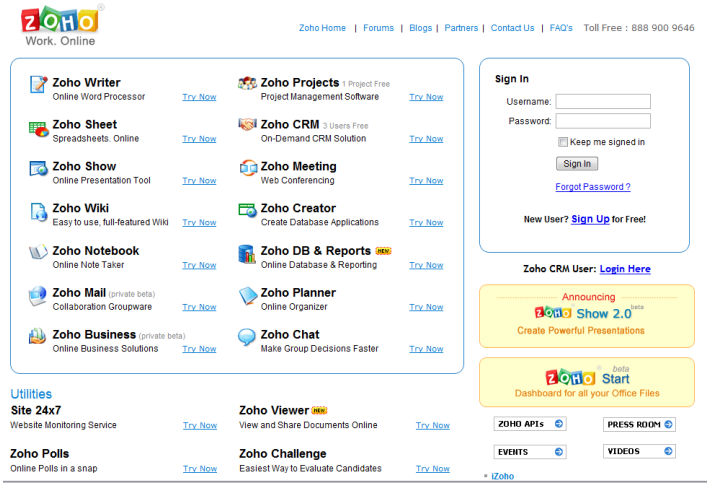
Twenty-five years ago, all computing was centralized. You might have had a terminal on your desk, but the applications lived on a mainframe or a minicomputer. Files were all stored on the main computer. Your documents were available from wherever you were as long as you were somewhere on the corporate network.

Twenty-five years ago, the Internet existed, but getting a connection was virtually impossible if you weren't on a college campus, in a government agency, or at a defense contractor. Even then, connections weren't fast and services were limited to e-mail, telnet, gopher, archie, jughead, and veronica (remember those?) The Web didn't exist, even in theory, until 1980 and didn't exist in practice until 1993.

Starting in the mid 1980s, desktop computers began to be introduced into offices because they brought the ability to distribute the processing power throughout the organization. This was a radical idea at the time; now it's the status quo.

Now the trend is to serve applications across the Internet. This is possible because graphical workstations can do things that nobody except for a few smart people at the Xerox Palo Alto Research Center thought possible, data transfer rates are far faster than they were 25 years ago, and the Internet is widely and inexpensively available.

Today, we can combine the strengths of desktop computers with the advantages of centralized processing. Applications such as Zoho Writer and Google Docs aren't as feature rich as Word, but they make your documents available wherever you go so long as you have an Internet connection. And they make it possible for many users to share and work on a single document.



The image above shows some of the many Web-based applications that Zoho serves. With a fast connection, these applications are nearly as fast as a similar application that runs on your computer, but you can easily share the documents with co-workers.

Instead of sending Word documents or PDFs, some public relations professionals are now sending just a link to a document on Google or Zoho. If anyone at Microsoft tells you that this isn't a point of concern, that person is lying.

Users can easily switch among the various Zoho applications. So now Microsoft is battling Wordperfect, Open Office, Google, Zoho, and others who see an opportunity. If you're familiar with how dinosaurs were undone by tiny ankle-biter mammals, the story's outcome may already seem clear to you.

Zoho even offers a Powerpoint-like application. The wide variety of options and the low cost (free for limited functionality or a dollar or less per month for increased functionality) make it easy for small companies to embrace the technology. Although I mentioned limited functionality, the spreadsheet at the top of the following page shows some powerful functions.

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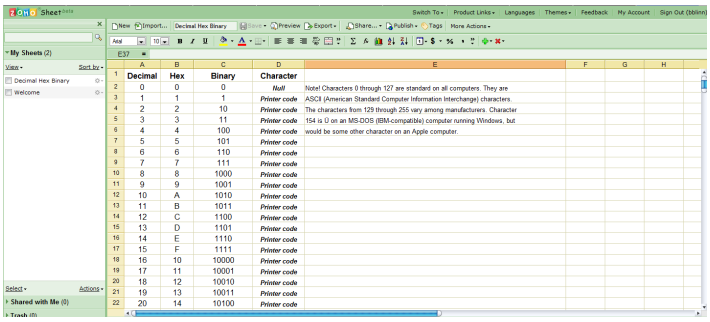

	A	B	C	D	E
1	Decimal	Hex	Binary	Character	
2	0	0	0	Null	Note! Characters 0 through 127 are standard on all computers. They are
3	1	1	1	Printer code	ASCII (American Standard Computer Information Interchange) characters.
4	2	2	10	Printer code	The characters from 128 through 255 vary among manufacturers. Character
5	3	3	11	Printer code	154 is Ü on an MS-DOS (IBM-compatible) computer running Windows, but
6	4	4	100	Printer code	would be some other character on an Apple computer.
7	5	5	101	Printer code	
8	6	6	110	Printer code	
9	7	7	111	Printer code	
10	8	8	1000	Printer code	
11	9	9	1001	Printer code	
12	10	A	1010	Printer code	
13	11	B	1011	Printer code	
14	12	C	1100	Printer code	
15	13	D	1101	Printer code	
16	14	E	1110	Printer code	
17	15	F	1111	Printer code	
18	16	10	10000	Printer code	
19	17	11	10001	Printer code	
20	18	12	10010	Printer code	
21	19	13	10011	Printer code	
22	20	14	10100	Printer code	

The spreadsheet shown here uses decimal-to-hex, decimal-to-binary, and decimal-to-character functions. These are advanced functions for many spreadsheet applications. Also note how much Zoho Sheet resembles a standard PC-based spreadsheet.

Nervous IT Professionals

Security experts and IT professionals are nervous about these applications because proprietary data is stored on servers that aren't under the control of the company and because the applications depend on the Internet. No matter how robust the network is, a single cable cut can take an entire company off-line. Smaller companies aren't as concerned and, as long as you maintain a local copy of files stored on Internet-based servers, you're probably safe. ß

Voting in Ohio

In a couple of days, I'll spend another day working for the Franklin County Board of Elections. Technology continues to change and will change more by November. After last November's election, I wrote about security at the polling places and said that I felt security was good. But I also raised the question of vote tampering as the results move upstream. No system is perfect and vote rigging is as old as voting, but the vast majority of elections officials are probably interested in accurate, fair elections. Certainly that's the case with everyone I've encountered from the board of elections here. But that doesn't mean the results are safe.

The Ohio Secretary of State has ordered local boards of elections to provide paper ballots for any voters who prefer not to use machines, so the Franklin County Board of Elections has printed 30,000 paper ballots in addition to the 50,000 provisional ballots that must be used in certain cases. Franklin County has 780,000 registered voters.

The machines used in Franklin County have a real-time audit log (RTAL) that records every action a voter takes, but the RTAL tape is hard for most voters to read and it stays with the voting machine. Results are also recorded on flash memory cards (the kind you'd find in a digital camera) and yet another copy is recorded on a separate storage device. That device and the flash card are returned with certain other records on election night, hand delivered by the presiding judge of the precinct. The RTAL copy is returned to the board of elections with the machines.

Because the RTAL is hard to read and because most people don't have the time, interest, or knowledge to examine the tape, the machine could be rigged and all of the records could show the same incorrect results. From a programming perspective, it's a relatively trivial exercise to ensure that any given machine produces a specific result. And because these machines are essentially "black boxes" that run proprietary software that board of elections officials are not privy to, a single rogue programmer could affect elections nationally.

I'm not saying that this has occurred. I'm not even saying that it's likely to occur. But the fact that it could occur should be of concern to elections officials and voters alike.

Suggested Solutions

Some have suggested that the machines could print a copy of the ballot as cast by a voter. The voter would take the copy home. The problem with this is that it invites vote buying schemes. If voters can prove how they voted, they can sell their votes to "political machines". Ugh!

Or we could give each voter a copy of someone else's ballot. The voters would not be known to each other, so privacy is assured. The voters don't receive copies of their own ballots, so they can't sell their vote based on the printed copy. This system would rely on random numbers voters contacting the board of elections to confirm that votes on their ballot were counted as cast. The opportunity for confusion and misunderstanding is enormous. Ugh!

The best suggestion I've heard would have each voting machine print a paper ballot. It could also record the votes electronically for faster results but, should the election be contested, it's the paper ballot that counts. The voter would examine the paper ballot before leaving the polling place and confirm that it exactly reflects the voter's intent.

The paper ballot would be placed in a ballot box and returned to the board of elections. Because the ballots have been machine printed, there would be no question about partially filled boxes, undervotes, overvotes, or hanging chads. This is where a rogue programmer could influence the results by having the optical scanner flip votes, but the paper ballots would be available for a recount, should one be requested. This seems to me to be a method that would extremely difficult to tamper with and one that would serve all honest people well.

It also seems to me that this shouldn't be a political issue. Why should any honest politician (this is not an oxymoron), any honest election worker, or any honest voter want anything other than a clear and accurate counting of votes? ß

CORNER on the market by A.J. Stinnett

"Motivating is getting people to do what they want to do; the trick is to help them figure out what they want to do!"