

Mobile Radio Company

Workstation Assessment

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MOBILE RADIO COMPANY – WORKSTATION ASSESSMENT

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Company profile

A family-owned business providing two-way radio sales, installation and service to businesses, e.g. fleets and events.

Current I/T Environment

Data

Hardware

- 1 server
- 6 desktop PCs
- 2 printers: Lexmark X73 B&W laser, Epson LQ-570+ B&W form feed
- Tape backup

PC	Description	Operating System	Notes
Office Manager	Premier Pentium III		Key app: QuickBooks
Salesman	Packard Bell		"Internet issues"
Server	Assembled from components		Not currently used as the server.
Tech1	Intel Pentium, 32 MB RAM, 3 GB HDD	Win/98 SE	"Acting up"
Tech2	AMD-K6, 28 MB RAM, 4 GB HDD	Win/98 SE	Works OK
Tech3	Compaq Deskpro	Win/98	Unstable, hard disk has vital data that needs to be recovered
Owner	Compaq Presario	Win/98	De facto server. Needs cookies removed.

Software

- Microsoft Windows /98 Second Edition
- Microsoft Internet Explorer
- Microsoft Office – Word, Excel, PowerPoint used most often
- Adobe Acrobat Reader
- Intuit Quick Book
- Radio programming – Kenwood, ICom, Motorola, 12+
- Seagate Backup Executive
- WinZip

Network

- 10 mbps Ethernet, D-Link hub
- Microsoft Workgroup
- Static IP addressing
- Dial-up Internet access
- E-mail: mobileradiocompany@yahoo.com

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Voice

- Local: SBC, 3 voice lines, 1 line shared fax/Internet
- Long distance: LDMI
- Toll-free: none

Current Issues:

In rough order of priority.

1. Owner needs to focus on the core business. No I/T staff. I/T issues consuming too much time.
2. Vital data
 - a. Is not being systematically backed up.
 - b. Must be retrieved from Tech3 hard disk.
3. Stability
 - a. Of PCs, especially Tech 1-3
 - b. Of network, e.g. cannot access files on other PCs.
 - c. Server PC cannot access network.
4. Internet access
 - a. Current connection is slow and not available from all PCs. Technicians are using public library computers for Internet access.
 - b. Cable modem, i.e. Comcast, is not available at this location.
5. Radio programming applets:
 - a. Some ICom applets are DOS-based, technicians currently re-start PC in DOS mode
 - b. Some Kenwood applets will not run on current hardware, i.e. require slow clock/old hardware.
 - c. Some applets will not push results out to the correct COM port.
6. Data access
 - a. All key applications should be available to Owner from any computer.
 - b. Technicians should not have access to privileged information, e.g. accounting.
 - c. Technicians often search more than one PC and/or sub-directory to locate data files.
7. Tech3 PC is non-functional. Operating system needs to be reloaded, but there is no Win/98 CD-ROM.
8. e-mail access: Each employee (Owner, Office Manager, Salesman) has an e-mail account, but the accounts are not on the same system. Owner wants to be able to read any business-related e-mail sent to any Tri-County..
9. Printer access: Both printers should be accessible from all PCs.

Primary Goals

1. Recover data in jeopardy.
2. Begin regular data backups.
3. Stabilize the entire environment
4. Provide safe, fast, cheap internet access from all PCs.

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Secondary Goals

5. Provide improved access to key applications.
6. Provide improved access to data.
7. Provide improved access to printers.
8. Upgrade e-mail capabilities.

Recommendations to achieve primary goals

Recover data in jeopardy.

Customer data is the life-blood of any business, large or small. Protecting customer data is a high priority. Owner can use this procedure to move the data off the damaged hard disk.

- Remove hard disk from Tech 3. Temporarily install in Tech 1 or Tech 2. (Reset the master/slave jumper if appropriate.) Copy all data as appropriate. Replace hard disk in Tech 3.
- Purchase a Windows 98 CD from eBay or other inexpensive source. Make sure it's a) the Second Edition, b) an original CD-ROM (not a copy), c) a "full" version (not an upgrade), c) has a COE (certificate of authenticity). OEM is ok. For example:
http://cgi.ebay.com/Microsoft-Windows-98-SE-Second-Edition-Full-Install_W0QQitemZ7194092847QQcategoryZ41884QQrdZ1QQcmdZViewItem
- Reinstall Windows 98 in Tech 3. Use the "format hard disk" option, i.e. do not attempt to "repair". This will completely erase the hard disk – make sure everything was saved in the previous step.

Begin regular data backups.

Weekly, even daily, backups are common among small businesses. (As an aside, NO BACKUPS are even more common, often leading to dire consequences.) Owner can use this framework to put a weekly backup procedure in place.

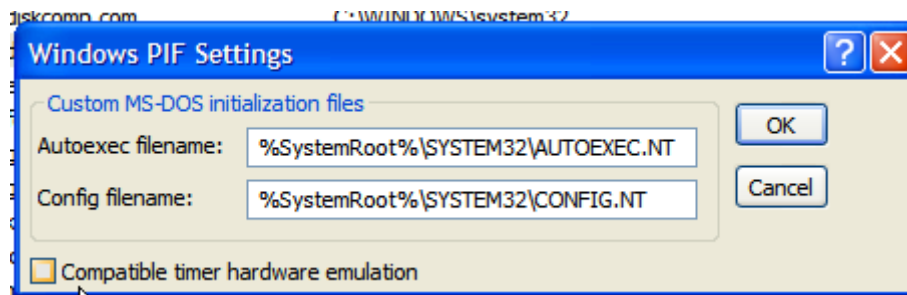
- Use the Seagate software to regularly, e.g. weekly, backup all customer data. Check the Seagate website for free updates and patches before proceeding.
- Determine where the data is that will be backed up. Most often data is centralized on a single hard disk residing on the server. Typically, separate sub-directories are created corresponding to customer names. This requires each person who works with customer data to develop the habit of saving (or moving) the data to the directory that will be backed up. As they say, it's "cheap insurance" against situations like Tech 3 (above).
- If the Seagate software is functionally rich it may be possible to "point" it to each individual PC. However, the more complicated setup and additional work necessary to keep it running smoothly generally outweighs the benefits.
- Buy enough tapes to create at least 2-3 "generation" backups. For example, in week #1 backup to tape #1. In week #2 use tape #2. In week #3 use tape #3. In week #4 reuse tape #1. In week #5 reuse tape #2. And so on.
- Get in the habit of keeping at least one backup offsite. This ensures you'll be able to run the business in case of fire or other catastrophic event.

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Stabilize the entire environment.

Employee productivity drops in unstable environments. The hidden costs are generally much higher than acknowledged. Owner should use this framework to determine whether the best use of funds is in new equipment vs. labor to upgrade existing legacy hardware and software.

- Inexpensive hardware coupled with major technology advances would make it easier, no more expensive, and provide better usability to replace the dated Tech1/Tech2/Tech3 desktops. However, a major assumption is that the Kenwood and ICom software requires their slower clock speeds and/or the back level operating system, Win/98.
- This assumption should be verified by contacting the software vendors. Oftentimes upgrades and/or circumventions are available. Ensure there's no alternative before proceeding.
- If the vendors have no solution then investigate reconfiguring the PIF (Program Information File) settings. The timer emulation (below) looks promising (this is a Win/XP screen shot – may not be avail on Win/98). If successful then upgrading to Win/XP is recommended.



Enables MS-DOS-based programs to reduce the rate at which the computer's timer sends timing signals.

- If the PIF does not afford a solution then the old hardware must be kept -- consider consolidating. Fewer old computers are preferable to more older computers. If possible, place the Kenwood and/or ICom programs on 2, or even 1 of the remaining Tech PCs.
- **BACKUP ALL CUSTOMER DATA ON EACH PC BEFORE PROCEEDING.**
 - This step is optional but preferable for Tech 1-3 PCs --reinstall Win/98 using the reformat hard disk option.
 - For all PCs, inc Server, Salesman, Owner and Office Manager:
 - Check for BIOS upgrades for each desktop. Strive to get Y2K certified BIOS.
 - Check for driver updates for each desktop.
 - Download and install all Win/98 critical updates. Setup automatic notification and installation (not avail on Win/98 but avail on Win/XP)
 - Do not install non-essential software.

Provide safe, fast, cheap internet access from all PCs.

For fast, cheap internet access Owner should contact Michael St. John (877.368.3663) at Data and Voice Solutions for free consultation and a DSL quote. A common approach combines both

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voice and data on a single line. It's a proven technique to bring high speed access to small businesses at a reasonable cost.

Ensuring safe internet access requires several steps. First, enable the Windows Firewall all Win/XP PCs. This prevents outside users from accessing data on Tri-County PCs.



This feature is not available on Win/98. While the risk of intrusion is very small it is possible. Options include a) purchasing a router-based firewall (this is included as part of the DSL recommendation below), b) moving all sensitive data to a Win/XP PC (this is recommended below for other reasons) or c) connecting the Win/98 PC through the server (rather than directly) to the Internet. This last option “C” is the lowest priority as it adds some network complexity and consumes more server resources.

Next, obtain these three programs. Used as a suite they provide robust (but not perfect) protection at a fraction of typical commercial licenses:

- Install virus protection, e.g. LavaSoft AdAware Personal, for each machine that has Internet access:
<http://www.lavasoftusa.com/support/download/#free>
- Install a spyware eradicator, e.g. Spybot Search and Destroy, for each machine that has Internet access:
<http://spybot.safer-networking.de/en/index.html>
Setup to eradicate upon startup on a daily basis.
- Install a cookie cleaner, e.g. WebRoot Window Washer, for each machine with Internet access:
<http://www.webroot.com/consumer/products/windowwasher/>
Setup to clean automatically on a daily basis.

Recommendations to achieve secondary goals

Provide improved access to key applications.

There are two fundamental ways to run application software, e.g. Kenwood, ICom, etc. They can be run locally (installed on one/several/all PCs) or centrally (installed on the server.) Some applications, like QuickBooks, require software on both server and PC. Small businesses typically

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start out installing every software package on every PC. As the company grows this approach gets increasingly more cumbersome. Tri-County is at the point where the benefits of centralization are sufficient to make the change.

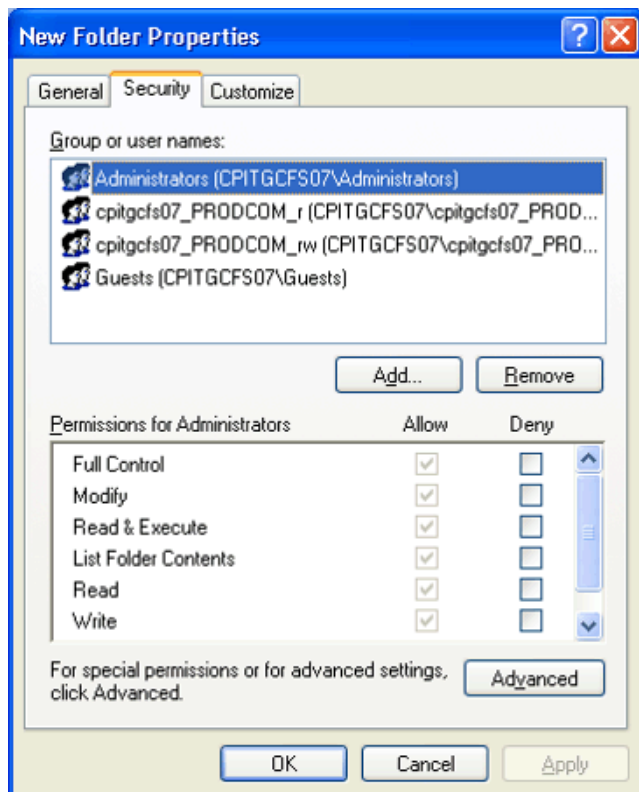
- Owner should begin to centralize key applications and run them from the sever wherever possible. This will ensure Owner can access any application from any PC. It will also result in less install work and less time spent applying bug-fixes, patches and release upgrades.
- Improved employee productivity. Provide a consistent look and feel by creating standard applications folders containing icons for each application, e.g. a Kenwood folder for Kenwood apps, and placing it in the same location on each desktop.
- Investigate alternatives for the DOS-based applications to avoid re-starting the PC in DOS mode.
 - Contact ICom, ask their tech support folks on the correct PIF (see above) setting to allow the program to run within a window.
- Contact Kenwood to investigate how to push results out to the correct COM port.

Provide improved access to data.

There are two fundamental approaches for data access – centralized (data resides on server) vs. decentralized. (data resides on individual PCs). Small businesses typically start with a decentralized model. Growth quickly illuminates the disadvantages, as when the Tri-County technicians have to search multiple places to locate data.

Owner should make a policy decision to place vital data on a single server. In addition to facilitating backups and providing a higher degree of Internet protection (discussed above), centralizing vital data will allow Owner to easily control who has access to what information.

The screen shot, “New Folder Properties” shows that each user can be assigned permissions ranging from none to all. Owner could use this feature to assign full permission to himself while limiting technicians from having any access whatsoever to financial data.



This feature requires the server to run Win/XP Professional. Depending on the currently installed operating system an upgrade may be necessary.

Check for upgrade discounts:

<http://www.microsoft.com/windowsxp/home/upgrading/matrix.msp>

Provide improved access to printers.

Win/98, and all subsequent releases, allow printer sharing. Owner can easily and quickly share both printers so that all employees have access to both.

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- Since the PCs are left powered on at all times the least-cost solution is to leave the printers attached to the PCs. (It's common to get an inexpensive black box, e.g. from MicroCenter <http://www.microcenter.com> , that connects printers directly to the network. This ensures the printer is always available, even when a PC is powered down. Again, not necessary in this case.)
- Install printer drivers to each of the two printers on each PC.

Upgrade e-mail capabilities.

Currently Tri-County has a single e-mail address, mobileradiocompany@yahoo.com . Each employee may or may not use their personal e-mail for company business. Many small business would purchase the domain name "tricountycom" from (just one example) <http://smallbusiness.yahoo.com/domains/> , then install the Microsoft Exchange e-mail server. However, this will add considerable software costs as well as create an ongoing requirement for an I/T technician to maintain the e-mail server.

If Owner goes with the DSL recommendation (see above) it will probably include multiple e-mail accounts as part of the package. This would provide a natural evolution without incurring additional costs. The key benefit will be consistent e-mail addresses that customers would associate with Tri-County. For example (not sure if these naming conventions will work but something similar will):

mobileradiocompany@sbc.com < general info & requests
owner.mobileradiocompany@sbc.com
officemanager.mobileradiocompany@sbc.com
salesman.mobileradiocompany@sbc.com
etc...

Next Steps

- Technician can easily handle all of the above, has a very attractive hourly rate, but has limited time. Technician can be reached at 000.000.0000.
- Tener Technologies is available immediately. They would provide free consultation and a quote based on a blended rate between \$100-125 per hour. Brian Tenerowicz, the owner, is at 248.593.5540.