

MilleniAds Consultation Report

Overview

Business Needs:

First I will start by breaking down what each employee does and will need in order to complete their task. There are ten total employees, and one CEO/owner. There are two creative directors, three graphic designers, three members of the sales staff, a financial accountant, and an office admin. The CEO needs to be able to receive reports and issue directions to the leaders below them. The creative directors need to be able to exchange ideas and information with everyone, especially the graphic designers and CEO. The graphic designers will need to create the actual products to be sold, both digitally and physically. The sales staff need to be able to travel and showcase products and options, while being able to access company information at any time. The financial accountant will need to manage transactions and purchases, condensing it all into reports for the CEO to review. The office admin will need to keep the systems operational and maintain connection to the network across all devices. To determine the exact hardware needs of each of these employees, I need to first understand each of their software needs.

Software Needs:

Each of these employees will need to access their company's website, communicate via email, and store various files. The individuals who will likely need more than this will be the graphic designers, the office admin, and possibly the financial accountant. The graphic designers will need to effectively run graphic design software, and be able to display their designs for the CEO/creative directors to review. The sales team will need wireless connectivity, along with stable

performance for showcasing products. The office admin will likely need to run multiple processes at the same time and manage the software installed on other devices. The financial accountant will need a system with a general ledger. The network for this company will be through the internet, using a web portal to send emails and jobs to the printers. The most efficient way to do this would be to have everything connected to a single wireless network, leaving physical connections as a backup for when connectivity is an issue.

Hardware Needs:

The most crucial piece of hardware for the company will be the specialized printers needed in order to create the actual products MilleniAds will be selling. In order to keep a stable wireless network, a router will be required. Power sources and protections to ward against power surges or brownout need to be considered as well. Each employee will likely be able to perform their necessary duties with a standard laptop or desktop, with the exceptions being the graphic designers, the office admin, and possibly the financial accountant. Laptops may be preferable for portability and ease of set up, especially for the sales team who will be traveling. The graphic designers will need larger displays, and enhanced video cards with dedicated RAM. The office admin will likely need a desktop computer of general higher quality for modular design and the multitude of tasks to be performed. A variety of devices will be needed including mice, keyboards, and possibly larger displays like televisions or projectors for design review and meetings.

Other Needs:

MilleniAds will need a variety of things to properly run their business, such as proper storage containers to ship or transport their products. The building the

business will be operated out of has several needs as well, primarily a large open space for the cubicles or desks of the in-office employees. A private office for the CEO will be needed, as well as an office/storage room for the office admin. A front waiting area for either customers, potential employees, or anyone else who might visit the business in person will be required, along with an employee who doubles as a receptionist. A meeting room for various purposes will be needed, with seating for all employees should it be necessary. A separate break room with toasters, microwaves, etc will be needed to maintain cleanliness and morale. However, the most important need for the business outside of software and hardware will be security. The employees will need a way to enter and exit without a dedicated guard, and keeping the property secure at night to prevent theft is crucial to not only prevent financial loss, but to ensure employees have no concerns about their own safety while working for

HARDWARE COMPONENTS

Hardware Requirements

Each of these employees will need to access their company's website, communicate via email, and store various files. The individuals who will likely need more than this will be the graphic designers, the sales team, and the office admin. The graphic designers will need powerful imaging software to create logos and designs for MilleniAds to produce for the market. The hardware will need to be able to process the images being manipulated with speed and efficiency without overheating, all on high resolution monitors to see the images as clearly as possible. The printers themselves will need to be able to produce high resolution images on various

materials, and because they make the actual product, I consider them the backbone of this company. The sales team will need to be able to display products and perform transactions outside of the office. Reliable wireless connectivity and portability are the top two considerations, with image resolution being a close third. Otherwise, the sales team won't have terribly strenuous tasks for their hardware. The office admin will need to be able to manage all the devices at MilleniAds, whether it be configuring switches or installing software. Having a computer with a solid all around processing capacity will pay off when the admin needs to perform his duties.

Graphic Design:

Looking at the [University of Nebraska–Lincoln Studio Art & Design majors computer specifications](#):

Hardware Specification for Mac/Windows

- **CPU:** Intel Core i5 or i7
- **Display:** 15 in., 1440 x 900 pixels, minimum.
- **RAM:** 8 GB minimum; 16GB is better. RAM in Apple laptops cannot be upgraded later.
- **Video Card:** A discrete video card with dedicated RAM
- **Storage:** 250GB minimum

Sales Team:

The sales team will need wireless connectivity, along with stable performance for showcasing products. They will also need a more portable option for their daily operations. Looking at [Palo Alto Hardware requirements for Sales & Marketing Pro](#):

- **Computer:** IBM-compatible Pentium PC or higher (either 32 bit or 64 bit is fine)
- **Operating system:** Microsoft Windows 10, Windows 8.1, Windows 8, Windows 7, Vista, XP Service Pack 3, or 2000 Service Pack 4
 - -Sales and Marketing Pro, and Marketing Plan Pro powered by Duct Tape Marketing are compatible with Windows 10, Windows 8.1 or Windows 8
 - -Sales and Marketing Pro, and Marketing Plan Pro powered by Duct Tape Marketing are certified for Windows 7 or Windows Vista, though the older versions are known to work in Windows 7 without major problems
 - -No Mac OS or Linux support
- **Memory:** Same RAM requirements as the operating system
- **Hard disk space:** Typically 100 MB of free space. The downloadable installer is roughly 50 MB.
- **Monitor:** Minimum SVGA (800x600) with 256 colors (1024x768 with 16-bit color or higher recommended)
- **CD-ROM drive:** A CD-ROM or DVD drive is required to install the software from the CD. Alternatively, the installer can be downloaded from our website and installed without an optical drive.

Office Admin:

The office admin will likely need to run multiple processes at the same time and manage the software installed on other devices. Looking at [University of Delaware](#)

[Recommended specifications for administrative computer purchases:](#)

- **Processor:** 6-core, Intel Core i5 Processor, 3.0 GHz, or better, with a TPM (trusted platform module) required.
- **Memory:** 8 GB

- **Monitor:** 24" Wide Flat-Panel display or bigger
- **Graphics:** Accelerator Intel HD Graphics, or discrete graphics card
- **Hard Drive:** 256 GB Solid State Drive (SSD), or better
- **Audio:** Integrated audio and powered or built-in stereo speakers, headphone/speaker jack, line-in and line-out mic jacks, optional digital I/O
- **Network Adapter or Modem:** Integrated 10/100/1000 Ethernet Adapter
- **Operating System:** Windows 10 Enterprise (can be upgraded to from any version of Windows 10 at no charge), or macOS Mojave 10.14.X or newer

Printers:

The most unique specifications needed will be for the printers to create the actual products to be sold. Laser printers are a must, and while the exact specifics of the products to be printed are left to interpretation, I'll be looking at two options. A small but high quality consumer printer, and a large high quality business printer for special products. Several other options for graphic design printers with hardware specifications listed can be found [here](#).

Hardware Options

Graphic Design:

For the Graphic Designers, I was able to find four potential candidates for desktop computers, and two potential monitors should the all in one options not be chosen. On the high end, the [HP - Pavilion 27" Touch-Screen All-In-One](#) can be purchased for \$1,299.99 and comes with a built in monitor. On the low end, the [HP - Pavilion 23.8" Touch-Screen All-In-One](#) can be purchased for \$949.99, and also

comes with a built in monitor. In the mid range, the [Dell - Inspiron Desktop - Intel Core i7](#) can be purchased for \$829.99, but does not include a monitor or input devices. On the much lower end, the [Dell - Inspiron Desktop - Intel Core i5](#) can be purchased for \$649.99, and does not include a monitor or input devices. On the high end for monitors, the [LG - 27UL600-W 27" IPS LED 4K UHD FreeSync Monitor with HDR](#) can be purchased for \$379.99. On the low end for monitors, [HP - 27f 27" IPS LED FHD FreeSync Monitor](#) can be purchased for \$139.99.

The main concern with the all in one systems is the inability to upgrade or replace components and monitors without manufacturer technicians. While the all in one systems would likely be easier to setup and begin operations with, in the long term they could become obsolete and need to be completely replaced. However, later on when that becomes an issue, MilleniAds may be in a financial state that allows for such upgrades. The desktops offer modularity and ease of upgrading or replacing components, while the all in one systems would be easier to setup and operate initially.

Sales Team:

For the Sales Team, I found four potential candidates for laptop computers. On the low end, the [HP - Stream 14" Laptop - AMD A4-Series](#) can be purchased for \$219.99. In the mid to low range, the [HP - Stream 14" Touch-Screen Laptop - AMD A4-Series](#) can be purchased for \$259.99. In the mid to high range, the [HP - Pavilion x360 2-in-1 11.6" Touch-Screen Laptop](#) can be purchased for \$399.99. On the high end, the [Dell - Inspiron 15.6" Touch-Screen Laptop](#) can be purchased for \$449.99.

The biggest concern is portability, and all of these options are laptops which meet that demand. While a larger display may be able to showcase products with ease, a

smaller device may be easier to bring places while maintaining a professional and composed appearance. The small screen size can be compensated for by connecting to larger displays at the customer's site. The demands of the Sales Team laptops aren't very rigorous, so the size, battery life, and quality of display are likely the best factors to base decisions on.

Office Admin:

For the Office Admin, I found two potential desktops and monitors. On the low end, the [HP - ENVY Desktop - Intel Core i5](#) can be purchased for \$699.99. In the mid to high range, the [HP - ENVY Desktop - Intel Core i7](#) can be purchased for \$869.99. On the low end for monitors, the [Acer - 23.6" LED FHD Monitor](#) can be purchased for \$99.99. In the mid to high range for monitors, the [BenQ - 27" IPS LED FHD Monitor](#) can be purchased for \$179.99.

While the office admin may not need the highest resolution monitor, a more powerful system is certainly a necessity. The only real drawback to the more expensive option is the price, and the Office Admin is likely one of the last places corners should be cut.

Printers:

For the printers, I have the Canon IP8720 Wireless Printer for printing on up to 13 inch by 19 inch paper with a focus on higher quality images. It can be purchased [here](#) for \$214.99. Another option is the much larger and more expensive HP DesignJet T730 Printer, which can print products up to 36 inches wide. It can be purchased [here](#) for \$2,995.00.

The main downside to the DesignJet is both the initial cost and the expensive inks and medium it requires to operate. While the Canon will likely suffice for many of the

smaller things like business cards and brochures, the DesignJet can create banners and larger products which will set MilleniAds apart from less serious competitors.

Hardware Recommendations

Graphic Design:

Looking at the Graphic Design requirements, I highly recommend the [Dell - Inspiron Desktop - Intel Core i7](#) and the [HP - 27f 27" IPS LED FHD FreeSync Monitor](#). A higher end system will be worth the difference in cost since the Graphic Designers are essential to MilleniAds. While this is the lower quality monitor, the fact that this system is not an all in one model allows for easy upgrades later on should it be necessary.

Sales Team:

Looking at the Sales Team, I recommend either the [HP - Stream 14" Touch-Screen Laptop - AMD A4-Series](#) or the [HP - Pavilion x360 2-in-1 11.6" Touch-Screen Laptop](#). While the second option costs more, it is a smaller 2-in-1 model which will have slightly better performance and professional aesthetic. I would avoid the low or high end models, and your preference between these two options shouldn't make a massive impact.

Office Admin:

Looking at the Office Admin, I recommend the [HP - ENVY Desktop - Intel Core i7](#) along with the [Acer - 23.6" LED FHD Monitor](#). While the Office Admin could likely get by just fine with the cheaper option, having a more powerful computer can pay off when it's needed. The monitor isn't as crucial, and can be upgraded later if necessary.

Printers:

The most crucial piece of hardware for the company will be the specialized printers needed in order to create the actual products MilleniAds will be selling. For this reason, I highly recommend starting with both the DesignJet and the Canon. Having at least one small printer for business cards and such is crucial, but having the DesignJet's capabilities will expand the customer base and make MilleniAds stand out from the competition. Using the DesignJet as a foundation to make decisions about software and hardware helps prepare us for growth in the long term.

SOFTWARE APPLICATIONS**Software Requirements:**

All of the employees at MilleniAds will need to access the company's website, communicate via email, manipulate PDF presentations, and store various files either locally or on the cloud. The graphic designers, the sales team, and the financial accountant will need specific software for their primary task. I have narrowed down the required software solutions into the following seven categories.

Browser:

All of the standard user requirements are met with a simple web browser on a windows 10 operating system. However, there is the issue of which browser to use across all computer systems. While there are many browsers to choose from, using one that is fast, secure, and intuitive will net the best results.

System Security:

Kaspersky's [Antivirus Software: How to Choose the Right Protection for Your Android, Mac or Windows System](#) article details several considerations to keep in mind when deciding on anti-virus software. Besides the level of security offered, a light system load will allow continued high performance for the system, and ease of use will allow continued user efficiency.

File Security:

For extremely sensitive data, simply making sure the computer is free of viruses and connected to a secure network may not be enough to ensure maximum protection. Having a program that can compress files for easier transmission will decrease download and upload speeds, but having the ability to encrypt that same file with a password will provide the extra protection when it is needed. Another program entirely may be needed to safely backup a system's files should recovering them from the original system become impossible. [The best Windows backup software](#) has several good considerations to keep in mind when deciding on backup software, including performance, scheduling, specific file backup, and image backup.

Network Security:

For network security, the office admin should be more than capable of setting up a secure on site network. However, the sales team will be traveling and connecting to various wireless networks on the road. A VPN that encrypts their connection on any network will greatly improve the security of the company, and allow for more sensitive information to be sent while off site.

Graphic Design:

The graphic designers will need an advanced program to generate the visual designs MilleniAds will be marketing. They will need one of the best programs

available if MilleniAds is to stand out a serious business on the market. For this reason, purchasing graphic design software is highly advisable. Choosing a program that is popular and cutting edge will not only give the graphic designers the tools needed to create their best work, but will leave the door open to receive, modify, and share designs with others using the same software should it be necessary. A more popular program will also have more documentation and coverage, allowing the designers to easily find answers to any questions they have about the application online should they arise.

Finance:

The financial accountant will need an application to manage the transactions and accounts of MilleniAds customers. The main consideration is security to ensure both the company's and the customer's information is protected. Financial information is the primary target of cyber criminals, and this leaves the financial accountant at the greatest risk.

PDF:

For everyone who will possibly be conducting a business meeting whether it be training for the employees from the CEO, a presentation given by the sales team to a customer, a new financial plan proposed to the CEO, a new series of designs proposed by the creative directors, or any other possible situation, some kind of PDF editor will be needed. PDF presentations are great tools for sharing ideas and information in a professional manner, and as such are an important thing to consider. Choosing a PDF editor that is easy to use and offers presentations without a watermark at the bare minimum will benefit the company greatly in the long run.

Software Options:

Browser:

PC World's [Best web browser 2020](#) article breaks down the most popular browser options and what they excel at. The four browser's mentioned, *Chrome*, *Opera*, *Firefox*, and *Microsoft Edge*, are all free and come with a wide variety of useful features. Choosing one will likely be based on personal preference, but the most important thing is to ensure that all company computers have the same browser installed for standardization purposes.

System Security:

PC World's [Best antivirus: Keep your Windows PC safe from spyware, Trojans, malware, and more](#) article details several options for protecting computer systems from malicious programs. *Norton Security Premium* is the best rated paid program by PC World for its ease of use and strong defenses. *AVG Internet Security* is the best rated budget software by PC World for its excellent protection and unlimited installs for \$70 per year. *Windows Defender Security Center* is the best rated free program by PC World for its convenience and relatively strong protection.

File Security:

PC World's [5 free compression tools zip your files just dandy](#) article details several options for compressing files to ease upload and download speed. Out of the five options presented, only *7-Zip*, *PeaZip*, and *ZipItFree* offer strong file encryption. Of those three, only *7-Zip* offers password protected file encryption. PC world's [The best Windows backup software](#) article details several options for recovering data should the original system become inoperable for any reason. *Acronis True Image 2020* is the best rated paid program by PC world for reliability and a wide array of

useful features. *Aomei Backupper Standard 4* is the best rated free program by PC world for its intuitive interface and high performance when backing up full disks.

Network Security:

Establishing a VPN for the travelling sales team will be important for sending all types of information, especially sensitive customer information. PC World's [Best VPN services: Reviews and buying advice](#) article details several options for VPN services and what each has to offer. *Mullvad* is the best rated software by PC World for its extremely thorough security and lack of logging any kind of sensitive data. *OVPN* is the second best rated software by PC World for its strong security and additional features like multi-hop. *Hotspot Shield Premium* is the fastest VPN software according to PC World, but it lacks certain privacy features.

Graphic Design:

TechRadar's [Best graphic design software of 2020: designing for print and printing](#) article goes through seven of the best options for graphic design software, taking into consideration their price, support, and functionality. *Affinity Designer* is the best rated overall software by TechRadar for its extensive task list and cloud based functionality for design teams. *Adobe Illustrator CC* is the second best rated software by TechRadar for its similarities to Photoshop and wide variety of functions, with the largest drawback being cost highlighting its high quality. *CorelDRAW Graphics Suite* is the third best rated software by TechRadar for its coverage of typical features and the unique CorelDRAW feature, as well as a notably efficient interface.

Finance:

The Balance's [The 8 Best Accounting Software Options of 2020](#) article details the top financial accounting software solutions for different purposes. *Intuit's Quickbooks* is the best overall rated software by The Balance for its advanced capability and versatility. *Xero* is the best rated cloud-first software by The Balance for its project specific accounting and improved cloud based services. *Zoho* is the best rated efficiency software by The Balance for its small business focused simplicity and payment reminder feature.

PDF:

PC World's [Best PDF editors: Reviewed and rated](#) article goes through several options and compares their pros and cons. *Adobe Acrobat Pro DC* is the best rated software by PC World for its advanced toolset, ease of use, and cloud subscription. *Nitro Pro 12* is the second best rated software by PC World for its team based cloud design and simple web browser interface. *pdfforge PDF Architect 6 Professional* is the best rated budget software by PC World for its significantly cheaper cost and nearly identical toolset.

Software Recommendations:

Browser:

I personally recommend using *Chrome*. It is one of the most popular browsers, many people are already familiar with it, and it is fast and easy to learn. The choice of browser won't impact the company very much as long as one of the top four are used, but this one is a good solid default if MilleniAds doesn't feel strongly about a specific browser.

System Security:

I highly recommend *AVG Internet Security* for protecting each company computer. It may not offer the best protection against intruders, but the security is still solid and the cost is remarkably low. Upgrading computers with especially sensitive information, such as the CEO's or the financial accountant's to *Norton Security Premium* may be a good idea if MilleniAds wants to take additional steps to protect their company information.

File Security:

I highly recommend using *7-Zip* for file compression and encryption when necessary. It compresses files as well as any program can, but the password encryption is a very powerful feature that will provide that additional safety when it is needed. I also recommend using *Aomei Backupper Standard 4* to backup company computers. While it isn't the best program for the job, it is the best free one. This expense can be spared since most of the company files will likely be kept in the cloud, and having a free backup for the files that aren't stored in the cloud provides additional peace of mind.

Network Security:

I recommend using *OVPN* to secure the network for the sales team, and possibly the on site network as well. It may not have the same level of anonymity like *Mullvad*, but it is easier to use and offers additional features that make it stand out without compromising network security.

Graphic Design:

As a nongraphic designer, I recommend asking the graphic designers what program they think they could do the most with and would prefer. They have been using various programs for years during their education and should absolutely be

included in this decision. However, excluding them from the equation I recommend *Adobe Illustrator CC* for graphic design software. It is the second highest rated according to TechRadar, with the only large con listed being the expensive cost. Considering that MilleniAds is specifically a graphic design company, anything less than the best solution here would require a reevaluation of company priorities.

Finance:

Again, I think including the financial accountant's opinion would be wise here. However, I recommend using *Zoho* for financial management. *Zoho's* project management accounting will allow for MilleniAds to track where the funds are going with more precision, and the payment reminders will help to ensure that MilleniAds has a solid financial reputation early on. *Zoho* may lack the features needed to run a massive company, but MilleniAds is small. Converting to a larger financial solution at a later time should it be necessary will include less strain than trying to work within a bulky software solution in the early stages.

PDF:

The big question to ask when making this decision is "how often will PDF be used at MilleniAds?". If the sales team plans to use PDF as their primary tactic when meeting with customers, *Adobe Acrobat Pro DC* is likely the best choice due to its efficiency and capabilities. If the sales team does not feel strongly about this topic, I recommend using *pdfforge PDF Architect 6 Professional* for its cheap price. It offers almost all the same functionality and is relatively easy to upgrade later on. Even if the sales team insists on using *Adobe*, *pdfforge* is a good option for all the other systems.

NETWORKING

Network Requirements

In order to effectively run a small business, a network will be needed. I have narrowed down the network requirements for MilleniAds into the following four categories.

Switch:

Regardless of whether the company network will be hardwired or wireless, a switch will be needed to connect all the devices at MilleniAds. The switch allows for data to be sent between computers and other devices, like printers. Looking at *Chron's* article [What Are Some Key Factors in Purchasing a Switch for a Small or Large Network?](#), we can see that the top things to keep in mind when deciding on a switch are capacity, speed, and intelligence.

Router:

At least one router will be needed to connect to the internet, set computer priority, and set security measures. Choosing one with a built-in firewall, including anti-spam and anti-virus features, will increase the network's security greatly. The ability to set up a VPN server and enable secure remote work is also highly recommended. Looking at Small Business Sense's article [How to Choose a Wireless Router for Your Small Business](#), we can see that the top considerations to keep in mind when choosing a small business router are security, speed, firewalls, guest management, and dual or backup WAN connections.

Cloud:

Looking at *Colocation America's* article [5 REASONS YOUR SMALL BUSINESS NEEDS EFFICIENT CLOUD STORAGE SOLUTIONS](#), we can see that having cloud storage is quite simply a must. Keeping client designs safe in case of system failure, accessible by multiple employees on different systems, and being able to upscale MilleniAds storage with remarkable ease are all good measures to ensure MilleniAds' long term success. Having a server could also prove useful for MilleniAds, whether a physical in house server or a cloud based solution. A dedicated server may be overkill considering the tasks to be performed, but a simple cloud storage of files should suffice for client information and product designs.

Remote Access:

Looking at *Staples'* article [Setting up Ironclad Remote Access for Your Small Business](#), we can see that a VPN is a vital piece of network security. If remote access is to be considered, both the devices to be connected by a MilleniAds employee needs to have up to date anti-virus software. If the device is not connected to MilleniAds secure network, then a VPN software solution as detailed in the previous milestone, like the sales team uses, will be needed. Mobile device access to the secure network should not be allowed, even for employees. I may be over cautious, but if a wireless network is to be used at MilleniAds, I recommend keeping the network password a secret to everyone except the CEO and office admin. If MilleniAds employees need access to the internet on their mobile devices as well, a secondary network specifically for guests and recreational use can be setup with a publicly displayed password. For employees who need to access computer systems remotely, using a VPN similar to the sales team's method when on the road is preferred.

Network Options

Switch:

Looking at TechRadar's article [Best network switches of 2020: 1, 2, 5 and 10GbE hardware for small business and home office](#), three options stand out as potential candidates for MilleniAds. The *TP-Link 16-Port Fast Ethernet Unmanaged Switch* for \$29.99 offers affordability and power efficiency, as well as increased performance on large data transfers. The *Linksys Business 16-Port Network Switch* for \$155.05 offers notable transfer sizes and speeds, as well as PoE capabilities. The *D-Link 8-Port EasySmart Gigabit Ethernet PoE Switch (DGS-1100-08P)* for \$111.99 offers a variety of advanced features and PoE capabilities, as well as a simple interface and setup.

Router:

Looking at TechRadar's article [Best small business routers 2020: top routers for work](#), three options stand out as potential candidates for MilleniAds. The *Netgear Orbi Pro router* for \$269.99 offers a reliable connection and customization that specifically caters to your business. The *Asus RT-AX88U* for \$349.99 offers Wi-Fi 6 capability and eight LAN ports which can replace the need for a switch. The *Synology RT2600ac router* for \$345.26 offers a built in VPN and the ability to aggregate two WAN ports.

Cloud:

Looking at ZDnet's article [Best cloud storage services in 2020: Google Drive, OneDrive, Dropbox, and more](#), three options stand out as potential candidates for MilleniAds. *Google Drive* offers secure storage and is easy to upgrade when the storage limit is met. Couple that with many user's familiarity with Google and this

presents a sound option. *Nextcloud* offers increased security and privacy, but requires you to provide your own servers or hard drives. If a server or router with storage is chosen, then using this option for the most sensitive data would ensure additional security. *OneDrive* offers extremely easy use and is built into Windows, and upgrading the storage limit is also secure and easy. With its intuitive integration with Microsoft Office programs, this becomes an easy choice if those programs are relied on heavily.

Remote Access:

Looking at TechRadar's article [Best remote desktop software of 2020: Paid and free choices for businesses](#), three options stand out as potential candidates for MilleniAds. *RemotePC* offers versatility and simplicity with web, desktop, and mobile applications. While it can be difficult to set up, its affordability and scalability make it a sound option for Remote Access. *Zoho Assist* offers access to nearly any type of device and some of the best security according to TechRadar. *Connectwise Control* offers access to a large number of devices and easy setup, but has a reputation for slow performance.

Network Recommendations

Switch:

I recommend the *D-Link 8-Port EasySmart Gigabit Ethernet PoE Switch (DGS-1100-08P)* for \$111.99 for its PoE capabilities and easy setup with potential advanced features for later on. While it doesn't specialize in large data transfers like the other options do, it can handle MilleniAds needs effectively and allows for expansion later on with advanced features or additional PoE devices. This switch leaves the most business options moving forward.

Router:

I recommend the *Netgear Orbi Pro router* for \$269.99 for its customization and notably reliable connection. While it is the cheapest option mentioned, the others offer features that seem unnecessary for MilleniAds present or future success. This affordable option meets all the requirements for MilleniAds network, including security and reliability. While it doesn't offer a built in VPN, that issue can be resolved using a software solution as detailed in the previous milestone.

Cloud:

This solution depends on other decisions that are made by MilleniAds. If all computers use Chrome, then *Google Drive* is a good option for its intuitive nature. If any of the Microsoft Office applications are regularly used, then *OneDrive* is a clear choice for its designed integration. I don't recommend *Nextcloud* unless a server or NAS is already implemented. Disregarding all of these considerations, I recommend *OneDrive* as a solid all around option. It comes built into Windows and is easy to scale up as your storage needs grow. Couple that with strong security and ease of access, and it becomes a clear choice unless other factors are involved.

Remote Access:

I recommend *Zoho Assist* for its ability to connect to nearly any type of device and its strong security. Security is always at the forefront of my considerations, and *Zoho* is noted as one of the safest options. The ability to connect to any device will help MilleniAds specifically for the printers to perform jobs before and after work hours with manual management if necessary.

MAINTENANCE AND SECURITY

Requirements

The number one thing that must be kept secure is the financial information of the clients and employees. Many companies are attacked with this exact target in mind, and as such, it requires more attention than anything else. The article [Cybersecurity for Small Business](#) lists ten good security concerns with employee security principles at the top, stating “Establish basic security practices and policies for employees, such as requiring strong passwords, and establish appropriate Internet use guidelines that detail penalties for violating company cybersecurity policies. Establish rules of behavior describing how to handle and protect customer information and other vital data.” The second consideration is preventing piracy of MilleniAds’ designs. The best way to prevent both of these is with software and network security solutions, as previously elaborated on. However, there are protocols and precautions against an “inside job” to implement. By “inside job”, I mean someone who has full authority to access sensitive information that reasonably shouldn’t. This brings us to managing user access.

Managing User Access

Ensuring that each employee can only access the information they need to for the successful completion of their daily tasks can prevent “inside jobs” that involve no viruses or firewalls whatsoever. If the graphic designer has access to the bank account information of every employee for example, it presents a glaring vulnerability without benefiting the company in any way. I would recommend keeping all network and system settings exclusive to the owner/CEO, but since MilleniAds will have a dedicated Office Admin, those responsibilities can be reasonably passed on to

them. However, no one else should possess the authority to modify any of those settings. The article [What is User Management? – Essential IT – JumpCloud](#) goes into moderate detail about managing user accounts, stating “. . .user management solves the problem of managing user access to various resources. For example, the marketing team generally requires access to different resources than the accounting team. Further, an employee on the marketing likely doesn’t need access to internal financial systems and vice versa, a finance employee isn’t requiring access to Salesforce or Marketo. User management enables IT administrators to manage resources and provision users based on need and role.” Not only does managing user access increase security, it also increases efficiency by removing unnecessary operations from a user’s access.

Backing up and Storing Information

Keeping data secure includes not only protection from outside threats that want the data, but also creating backups in case of destroyed equipment. If MilleniAds were to burn down in a fire without data backups, the company would have to be rebuilt from literally nothing. With data backups, only the site and hardware would need to be replaced. No easy task, but software can be a far worse setback. The article [The 3-2-1 Backup Strategy](#) argues that two copies of data should be kept on site, and one should be kept off site, stating “If you view your files as your investment capital, you want to diversify them as much as possible to limit your exposure should the unthinkable happen. Liquidity also matters; having a local backup and an offsite backup gives you more options for backup recovery.” The hardware for a dedicated server and backup device was elaborated on earlier, but something less drastic should suffice. By keeping the 3-2-1 backup strategy in place, any hardware damage will be just that, hardware damage.

FUTURE CONSIDERATIONS

In order to prepare for the future, we should first look at what we would do if we were to expand MilleniAds right now. Looking at the article [3 Critical Considerations When Growing a Small Business](#), the top considerations we can plan for are scalability and brand equity. While there isn't much I can do in terms of brand equity as a consultant, ensuring that the financial information of clients and employees will certainly prevent reputation smearing cyberattacks. Having high resolution printers and graphic design capabilities will ensure quality products, but the actual reputation of the company is in the CEO and employees' hands. Scalability, should MilleniAds want to expand, is the easiest to plan for given a bit of consideration. The network, hardware, and software are all set up in such a way that additional printers or computers can be added and configured without any real difficulty on the admin's part. The largest limiting factor would be the network capacity, but MilleniAds will need to at least double in size before that becomes an issue. When that day comes, expanding the network with additional switches and routers will allow continued growth without compromising the existing system.