Running head: MILLENIADS IT CONSULTATION REPORT 1

IT Consultation Report

Michael D Johnson

MilleniAds Advertising Company

MILLENIADS IT CONSULTATION REPORT 2

**Business Needs**

**Recommended Software Needs**

* Microsoft Office – for presentations, word processing, spreadsheets and file sharing.
* KasperSky Small Office Security.
* Adobe Illustrator for graphic creation and development.
* Customer relationship management software such as Pipedrive CRM.
* Antivirus software such as AVG Antivirus.
* Accounting software such as FreshBooks.
* Professional operating systems, such as Windows 10 Pro, for efficiency and easy integration.

**Recommended Hardware and Networking Needs**

* Tablets or 2-in-1's, for mobility and ease of use outside of the office.
* Industrial printer to fulfill orders and requests.

MILLENIADS IT CONSULTATION REPORT 3

* Desktops for each of the office staff – Simple but powerful enough for software needs.
* High-speed wireless router for the quickest and most efficient transmission of data.
* RJ-45 cables for each desktop in the office.
* Fire server for secure storage and easy file sharing.
* Surge protectors for the office staff and file server.

**Other Recommendations**

* Remote access for office staff that travel.
* Access controls in place and access allowed based on positional needs.
* Setup, train employee’s, and follow a company security policy.

MILLENIADS IT CONSULTATION REPORT 4

**Hardware Components**

**Hardware Requirements and Considerations**

The business has a variety of employee’s that will require different solutions based on their needs and job responsibilities. The graphic artists and creative directors will need powerful machines capable of producing high quality graphics but at the same time be versatile allowing for mobility and ease of use. For these reasons, a good 2-in-1 will fit their needs well. There are a few good choices including the Surface Book 2 and the Dell Inspiron 13 5000. While the Surface Book 2 is an industry leader, the price point is very high. Based on the needs of the graphic designers and the budget given, the Dell Inspiron 13 5000 will be a good choice. The Core-i5 model comes with a 1TB hard drive and 8 GB of ram that is expandable at a decent price point.

The accountant will need something that can run numerous processes simultaneously and is portable as well as powerful enough to handle the demand. HP has a good line of ProBooks that are portable and powerful enough for the responsibilities of the accountant. Two models to look at are the ProBook x360 Convertible and the ProBook 450 G5 Notebook**.**

MILLENIADS IT CONSULTATION REPORT 5

While the x360 is converts into tablet form, the display is much smaller at 11.6” and the storage space included with the system is small for the price. The 450 G5 comes with a larger 15.6” display, 500 GB hard drive, and 4GB of ram at a cheaper price point.

The office staff in the business need something small and simple. The HP Pavilion 570-p035t and the HP all-in-one are good choices for the sales team. While the all in one has the upside of space saving, it is costlier than the Pavilion with less storage and memory. The HP Pavilion comes with a core i3 processor, 8 GB of ram and a nice 1TB hard drive. This is a solid desktop for the sales team at a decent price.

For printing needs I recommend going with a laser printer. Laser printers generally have an overall lower cost of ownership and are built for printing large quantities on a frequent basis. Two ideal choices are the Brother MFC-L8900 and the HP LaserJet Pr0 500 MFP M570dn. After comparing the two the Brother MFC-L8900 has a better PPM than the LaserJet, a higher yield on toner cartridges at 6500 pages vs. HP’s 6000 pages, has a 1300 sheet total capacity with configurable trays, and free support for the life of the product. The Brother also features mobile printing, and scanning as well as built in security features. This makes the Brother MFC-L8900 the superior choice in this comparison.

MILLENIADS IT CONSULTATION REPORT 6

For the office administrator I would recommend the Dell XPS. Much more powerful than the HP Pavillion the sales staff will be running with, it offers a six core Intel i7-8700 CPU with

16GB of ram, a decent 1TB HDD and dedicated graphics from the GeForce GTX 1050 TI. The dedicated graphics are excellent here as I recommend a dual monitor setup for the office administrator as well.

As the CEO, you will need something extremely versatile, yet powerful enough to handle everything you will be doing on a day to day basis. With that in mind, I recommend the Dell XPS 15 2-in-1. While it is a bit on the higher side price wise, it is versatile, comes with an 8th generation Intel Core i5-8305g CPU that can handle the demand from any applications running at the same time, a decent 512GB SSD, and close to 16 hour battery life to keep you going.

**Hardware Recommendations**

The following list is comprised of my final hardware recommendations for the business based on the budget given, the roles and responsibilities of the staff, and the computer specification and computing power needed to run any applicable software:

MILLENIADS IT CONSULTATION REPORT 7

* **One HP ProBook 450 G5 Notebook Desktops**
* **Four Dell Inspiron 13 5000 2-in-1’s**
* **Three HP Pavilion 570-p035t Desktops**
* **One Dell XPS Desktop**
* **One Dell XPS 15 2-in-1**
* **One Brother MFC-L8900CDW Laser Printer**
* **Three Acer V276HL Cbmd Monitors**
* **Two Dell SE2717HR Monitors**
* **Two APC P11U2 Surge Protectors**

**Software Components**

**Software Requirements and Considerations**

There are many important software needs for your business. You will need word processor, spreadsheet and presentation software for everyday business needs. You will also need strong endpoint security to keep your business safe and secure, powerful graphic design software to bring your clients requests to life, a solid CRM software to keep your sales team on top of things, and accounting software that can manage the financial side of the business.

MILLENIADS IT CONSULTATION REPORT 8

To begin, you will want strong endpoint security for all devices in your business. For this we look at KasperSky and Bitdefender. While both have strong security such as firewalls and anti-phishing, Bitdefender requires separate license purchases for each device whereas KasperSky has tiered pricing that will better fit your need with a package for $217.49 that covers 10 users, 1 fileserver, and 10 mobile devices. It is also scalable as the business grows.

To encompass most of your accounting needs, Freshbooks and Function Point are good contenders. Function Point has a lot of the essentials you will need to manage your day-to-day operations such as custom quotes and invoicing, timesheets, and cost tracking. However, Freshbooks has a much deeper set of tools that will scale well as the business grows. Freshbooks gives you a wide range of tools from invoicing, expenses, estimates & proposals, time tracking, client information, and more. It also comes with a yearly billing option that provides a discounted rate starting at $270.00 a year for up to 50 clients.

Next, you need to have solid customer relationship management (CRM) software. There are many choices out there including Freshsales and Pipedrive. Both provide some excellent tools and many of the same such as mobile integration to allow you to work on the go from anywhere, sales reporting and forecasting, and email integration. The largest difference between the two is in the pricing. To unlock all the features that Freshsales offers, you will be paying $79

MILLENIADS IT CONSULTATION REPORT 9

per month per user billed annually while Pipedrive is only $49.17 per month per user billed annually for the similar tools.

You will also need excellent graphic design software to fulfill your client’s requests. There are a few good choices and among the top are Adobe Illustrator and CorelDraw. CorelDraw has a slightly cheaper yearly subscription price point than Adobe Illustrator does at $198.00 per year, per license compared to the $239.88 price of Adobe Illustrator. This is one scenario where the slight increase in price may be worth it. Adobe Illustrator’s toolset is much easier to use and is much easier to navigate. Adobe Illustrator also has a much more robust set of tools at the user’s disposal such as font and text enhancements and path segment reshaping.

Looking at the options for the basic tools every business needs, G Suite and Microsoft Office 365 are the top options. While both provide great services that are paramount for any business, Office 365 also provides built-in antivirus and antispam protection, multi-factor authentication, and threat management. Microsoft Office also comes with Skype business which is an excellent tool for video chat and instant messaging. In addition to that, Microsoft Office 365 is relatively cheaper that G Suite for the top tier at $12.50 per month, per user as opposed to G Suites price point of $25.00 per month, per user. This is a significant difference in price. On top of that, Microsoft office comes with a tiered support program that ranges from non-critical

MILLENIADS IT CONSULTATION REPORT 10

issues during business hours to critical issues that have a 24/7 availability with as little as a 1 hour response time.

To fit well with the hardware we have selected, Windows 10 Professional is the best choice for the job. Compared to Windows Home, Professional offers advanced features like remote desktop, device guard, and group policy management. This is a solid choice for businesses due to the sophisticated protection features that come along with Windows 10 Professional.

Lastly, you will want to protect your pc, tablet and smartphone. For this, a good antivirus program is a must. Two of the best out there are Norton and AVG. Norton is cheaper off the top at $55.00 for the first year but is limited to only 10 devices. This means multiple subscriptions would be required to cover all the devices and computers in the business which could get very costly. AVG is slightly more expensive upfront at $70.00, however, it allows for installation on unlimited devices. AVG combats spyware, viruses, and malware and offers an enhanced firewall.

MILLENIADS IT CONSULTATION REPORT 11

**Software Recommendations**

The following is a list of final software recommendations for the business. Pricing on software is based on who needs the software, as not all employee’s will need all software mentioned. based on the given budget, responsibilities of the staff, and the type of business:

* **KasperSky Small Office Security**
* **FreshBooks Cloud Accounting**
* **Pipedrive CRM**
* **Adobe Illustrator**
* **Microsoft Office 365**
* **AVG Antivirus**
* **Windows 10 Pro**

**Network Options**

**Network Requirements and Considerations**

MILLENIADS IT CONSULTATION REPORT 12

Your network is what will bring your business together. It is important that you have your network structured in a way that fits your business needs while protecting the integrity of your data. There are many different options to choose from when deciding how best to set up the network for your business.

The first thing we will look at is the host role. There are two distinct ways to set up your networks host role, peer-to-peer and client-server. A peer-to-peer set up can be inexpensive and easy to get going, however, because each computer in the network relies on the others for resources, it can be difficult to maintain and is highly unscalable. On the other hand, a client-server network, while costlier to implement, is the superior choice when it comes to host role options. A client-server network keeps all your data in a centralized location, eliminating the need for each computer to rely on the next and enhancing the security of your network as it is easier to secure data in one location than in numerous locations. Client-server networks are also easily expandable and will scale well with your business.

Moving on, we will look into Internet Service Providers (ISP’s) for the business. You will want an ISP that provides a business level plan and is reputable. Two of the better choices here are Spectrum and Century Link. While Century Link is well known, they tend to be on the higher side when it comes to prices and do not offer as much as Spectrum does. Spectrum

MILLENIADS IT CONSULTATION REPORT 13

Business comes standard with internet security, cloud backup, and a private business wi-fi connection. All of this will run you as little as $44.99/month for their 200mbps service.

The next thing we want to think about is your network connection. You need something that is secure but allows access to everyone who needs it and supports the hardware they are using to connect to the network. The best choice for the network connection setup in your business would be a WLAN (Wireless Local Area Network) setup. The WLAN will keep your network reach smaller and confined within the walls of your business whereas a MAN or WAN would reach out further than necessary, causing more of a security risk that is needed.

To run the network, you will need a strong wireless router. We want to go with a wireless router to give the employees who move around a lot in their positions the mobility they need to do so. To keep you connected in the business and keep everything online and running smooth we need a strong enough router to handle all the traffic and be secure. The Asus BRT-AC828 is expensive but is one of the top choices out there. It has great expansive capabilities, offers hardware security and offers speeds of up to 2.6Gbps.

Next, we need to think about data storage, backup, and security. Looking at some of the good servers out there that fit both your budget and business needs we look at the QNAP TS-

MILLENIADS IT CONSULTATION REPORT 14

453A and the Lenovo ThinkServer TS140. While the Lenovo ThinkServer TS140 is slightly cheaper, it comes at a cost. The ThinkServer TS140 has a slower base CPU and no how swapping. For a small increase in price we can get the Qnap TS-453A which has a decent Celeron Quad Core and 4BG of ram along with four bays to build up your storage as the business grows. The Qnap TS-453A is very fast, easy to setup and supports server virtualization. The Qnap TS-453A allows for cross platform file sharing and file synchronization across devices and clouds. Files are protected by integrated anti-virus and files can easily be backed up. Paired with a 4TB Seagate Ironwolf that is optimized for NAS this makes a decent combination.

Lastly, we will discuss the security of your network. Security of the network, and there for your business and its data, is the most important aspect of your network to consider. Having your network setup as a client-server network has already made your network more secure as you have centralized all your important data, making it easier to physically protect. Another key point to look at is remote access to your network. Remote access is a privilege that should only be given to the employees whose responsibilities in your company require it. The more employees that have remote access, the more of a security issue it becomes. When using remote access or a mobile device to connect to the businesses network, a VPN should be required. This adds an extra layer of security when accessing the network from outside of the business. Finally, a strict network policy should be implemented in your business. The policy should be very clear

MILLENIADS IT CONSULTATION REPORT 15

on who should have remote access, how the remote access should be used, rules and guidelines for using the company network, and security expectations for all employees.

**Network Recommendations**

* **Host role setup as client-server**
* **LAN network connection type**
* **Remote access only for employees who need it to fulfill job role**
* **VPN used with all mobile devices or devices that will use remote access**
* **Develop a strict network policy for the business**
* **One Asus BRT-AC828 AC2600 Wi-Fi Router**
* **One Qnap TS-453A NAS Server**
* **One Seagate IronWolf 4TB NAS Hard Drive**
* **Spectrum Business (ISP)**

MILLENIADS IT CONSULTATION REPORT 16

**Security and Maintenance**

**Security and Maintenance Considerations**

The most important part of your business is how you will manage the maintenance and security of your data. There are many considerations to make when looking at security and maintenance.

First, you need to have a plan for backing up your data. Who will do it, how often, and where it will be stored are key questions we need to answer. Data should be backed up regularly by using a back up schedule that is managed by the system, not an employee in your business. The reason you want the system to manage your back up is because it can be very easy for an employee to forget about it. If this happens, and your system goes down, you may not be able to recover important data. For this reason, your system administrator should setup and maintain a regular back up schedule in the system.

The back up of your data should happen daily at the end of the workday. This way all of the changes made, and data created during the workday are backed up and nothing is missed. You also want to back up the data as often as possible. Backing up your data daily is ideal as this

MILLENIADS IT CONSULTATION REPORT 17

gives you back ups to restore from daily in the event of a system crash. This can save you from losing much more data than you would if you backed up weekly, or longer. You will Want to store the back ups in a protected area on in the cloud storage to avoid the back up data being affected by any issues your network may have.

Moving on, you will want to make sure that User Access Control (UAC) is always utilized. Employees should not be allowed to make changes to the computers without administrator approval. This will help keep your computers clean and free of malicious programs that could otherwise be allowed into the business. You also want to make sure that employees only have access to the files that they need access to. Important business files (such as detailed client information, business figures, and employee pay) should be kept in password protected folders to help protect the integrity of the information. Employee’s should also only have access to the folders and files they need regarding their positions and job requirements. They should only have the ability to edit folders and files that are needed in their role.

When it comes to structuring your businesses file directory, there are many different avenues you can take. However, when structuring your directory, you will want to make it as easy as possible to navigate and understand. A tiered approach is a solid approach to take when structuring the directory in your business as it adds depth and helps keep things better organized. In a four-tiered filing system, you will start with departmental folders, then move to categories in

MILLENIADS IT CONSULTATION REPORT 18

the departments, followed by dated subfolders based on day/month/year, and finally your actual files. This setup helps sort in an easy to comprehend manner making it easy to navigate.

**Future Considerations**

**Future Considerations and Recommendations**

As your business grows, you will need to make changes such adding more hardware or software, reconfiguring your network, and managing higher levels of security as you expand beyond a single unit. Adding a new office will change the configuration of your network and how it is used. You will need to switch from just a local area network to a much larger network, such as a MAN or WAN. This will also mean adding more hardware for new employees, another printer to handle the increased capacity, and upgrading existing systems hardware and software to adapt to the increase of both workflow and the network growth.

You will also need to consider how this would change your security. Adding more employees adds more risk and increases the ways the integrity of your data could be compromised. You may need to assign more employees to watch over the security of your data

MILLENIADS IT CONSULTATION REPORT 19

by giving them access to monitor the network. You will also want to rethink your file naming convention and reconfigure it to add another tier for location first to help keep it well organized.

**Final Recommendation List and Cost**

**Final Recommendations**

* **One HP ProBook 450 G5 Notebook Desktops - $474.00**
* **Four Dell Inspiron 13 5000 2-in-1’s - $2,800.00**
* **Three HP Pavilion 570-p035t Desktops - $1,290.00**
* **One Dell XPS Desktop - $1,060.00**
* **One Dell XPS 15 2-in-1 - $1,709.00**
* **One Brother MFC-L8900CDW Laser Printer - $600.00**
* **Three Acer V276HL Cbmd Monitors - $498.00**
* **Two Dell SE2717HR Monitors - $290.00**
* **Two APC P11U2 Surge Protectors - $76.00**
* **KasperSky Small Office Security - $217.49 per year**
* **FreshBooks Cloud Accounting - $270.00 per year**

MILLENIADS IT CONSULTATION REPORT 20

* **Pipedrive CRM - $491.70 per month**
* **Adobe Illustrator - $1,199.40 per year**
* **Microsoft Office 365 - $125.00 per month**
* **AVG Antivirus - $70.00**
* **Windows 10 Pro - $600.00**
* **One Asus BRT-AC828 AC2600 Wi-Fi Router - $662.00**
* **One Qnap TS-453A NAS Server - $550.00**
* **One Seagate IronWolf 4TB NAS Hard Drive - $132.00**
* **Spectrum Business (ISP) $44.99 (per month)**
* **Host role setup as client-server**
* **LAN network connection type**
* **Remote access only for employees who need it to fulfill job role**
* **VPN used with all mobile devices or devices that will use remote access**
* **Develop a strict network policy for the business**
* **Daily backup of user data**
* **Weekly backup of system data (unless changes to the system are going to occur)**
* **Strict and enforced security policy**

**Total Cost: $13,159.58**

MILLENIADS IT CONSULTATION REPORT 21

**Resource List**

HP Probook Convertible Factsheet - <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=4aa6-8727enuc>

HP ProBook 450 Notebook Factsheet - <http://www8.hp.com/h20195/v2/GetDocument.aspx?docname=4aa7-0626enuc>

Dell Inspiron 13 5000 2-in-1 Specs and Information - <https://www.dell.com/en-us/shop/dell-laptops/inspiron-13-5000-2-in-1/spd/inspiron-13-5379-2-in-1-laptop/fncwsar5008h>

HP Pavilion 570-p035t Specs and Information - <https://store.hp.com/us/en/pdp/hp-pavilion-desktop---570-p035t>

Dell XPS Desktop Specs and Information - <https://www.dell.com/en-us/shop/dell-desktop-computers/xps-tower/spd/xps-8930-desktop/dxcwvmax004h?selectionState=eyJGUHJpY2UiOjEwNTkuOTksIk9DIjoiZHhjd3ZtYXgwMDRoIiwiUXR5IjoxLCJNb2RzIjpbeyJJZCI6MTEsIk9wdHMiOlt7IklkIjoiMTBQNjRFIn1dfV19>

Qnap TS-453A Specs and Information - <https://www.qnap.com/en-us/product/ts-453a/specs/hardware>

MILLENIADS IT CONSULTATION REPORT 22

Dell XPS 15 2-in-1 Specs and Information - <https://www.dell.com/en-us/shop/dell-laptops/xps-15-2-in-1/spd/xps-15-9575-2-in-1-laptop/dncwlf410s?selectionState=eyJGUHJpY2UiOjE3MDkuOTksIk9DIjoiZG5jd2xmNDEwcyIsIlF0eSI6MSwiTW9kcyI6W3siSWQiOjExLCJPcHRzIjpbeyJJZCI6IjEwUDY0RSJ9XX0seyJJZCI6OCwiT3B0cyI6W3siSWQiOiJHTE84OTFIIn1dfSx7IklkIjo1NzIsIk9wdHMiOlt7IklkIjoiRkcwMDA2In1dfV19>

HP LaserJet Pro 500 Facts and Information - <http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=c03498628&doctype=data%20sheet&doclang=EN_US&searchquery=&cc=us&lc=en>

Brother MFC-L8900CDW Specs and Information - <https://www.brother-usa.com/products/MFCL8900CDW#specifications>

Seagate IronWolf NAS HDD Specs and Information - <https://www.seagate.com/www-content/datasheets/pdfs/ironwolf-12tbDS1904-9-1707US-en_US.pdf>

Asus BRT-AC828 AC2600 Router Specs and Information - <https://www.asus.com/us/Networking/BRT-AC828/specifications/>

KasperSky Facts and Information - <https://media.kaspersky.com/pdf/b2b/KSOS5-Datasheet.pdf>

MILLENIADS IT CONSULTATION REPORT 23

Bitdefender Facts and Information – <https://download.bitdefender.com/resources/media/materials/enterprise-security/en/Bitdefender-2015-NGZ-EnterpriseSecurity-DS-67962-A4-en_EN-web.pdf?adobe_mc=MCMID%3D05550541706802459400571757289022200604%7CMCORGID%3D0E920C0F53DA9E9B0A490D45%2540AdobeOrg%7CTS%3D1532737187>

FreshBooks Facts and Information - <https://www.freshbooks.com/features>

Function Point Facts and Information - <https://go.functionpoint.com/function-point-advertising-agency-solution-gdm/?directory=Advertising_Agency&utm_source=capterra>

Freshsales Facts and Information - <https://www.freshworks.com/freshsales-crm/features/>

Pipedrive Facts and Information - <https://www.pipedrive.com/en/features>

CorelDraw Facts and Information - <https://www.coreldraw.com/en/product/graphic-design-software/#features>

Adobe Illustrator Facts and Information - <https://www.adobe.com/products/illustrator/features.html>

G Suite Facts and Information - <https://gsuite.google.com/features/>

Microsoft Office 365 Facts and Information - <https://products.office.com/en-us/business/office-365-business-premium>

MILLENIADS IT CONSULTATION REPORT 24

AVG Antivirus Facts and Information - <https://www.avg.com/en-us/affiliate/homepage-2?utm_medium=affiliate&utm_source=commissionjunction&utm_campaign=8200811>

Norton Security - <https://us.norton.com/norton-security-with-backup?inid=nortoncom_nav_norton-security-with-backup_products-services:norton-security-with-backup>

Windows 10 Facts and Information - <https://www.microsoft.com/en-us/windowsforbusiness/windows-10-pro>

Network Connection Types - <https://www.belden.com/blog/digital-building/11-types-of-networks-explained-vpn-lan-more>

Host Role Comparison - <https://www.techrepublic.com/article/understanding-the-differences-between-client-server-and-peer-to-peer-networks/>

Remote Access Security - [https://resources.infosecinstitute.com/best-practices-for-securing-remote-access/#gref](https://resources.infosecinstitute.com/best-practices-for-securing-remote-access/%23gref)

Spectrum Business - <https://business.spectrum.com/internet/high-speed-internet.html>

Century Link - <https://www.centurylink.com/small-business/>

Directory Naming - [http://www.tomsitpro.com/articles/business-filing-system-nomenclature,1-3624.html](http://www.tomsitpro.com/articles/business-filing-system-nomenclature,1-3624.html%20)