Tech Devices Buying Guide

By XXXXXXXXX

ITEC-3000: Internet Tools Technology

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Abstract

The Supervisor has requested assistance in researching and comparing the following technology gear. Each of these items requires minimum specifications.

1. A Digital Camera
    a. 16 Megapixels
2. A Desktop/ Laptop/ All-in-one computer
    a. 4.5 GHz Processor
    b. 6GB memory
    c. 500 GB Hard Drive
    d. HDMI Output
    e. Current OS
    f. Microsoft Office
    g. Monitor (If comparing desktops)
3. A printer
    a. Can be inkjet or LaserJet
    b. Can be Wireless
    c. Can be Portable
    d. Photo Printing Capable

Digital Cameras

While there is a substantial argument amongst even the most professional of photographers, the two standards for brands of cameras are Nikon and Cannon. To go somewhere beyond just entry level, no matter the brand, you'll be doing paying upwards of $500+ for a new setup, but it can be difficult to determine which brand to choose.

The differences in brands is like other choices you've had, like Marvel vs DC comics, White or Wheat bread, Soccer or Football, etc. The difference in these choices is that you've got a small investment in the initial choice and switching sides later doesn't typically cost you more. The brand choice could be better compared to dating and trying to figure out if you can put up with the person before making the large investment in them. Its one of the oddest choices in your life, where you will be right and wrong in the exact same instance. (Grigonis, 2019)

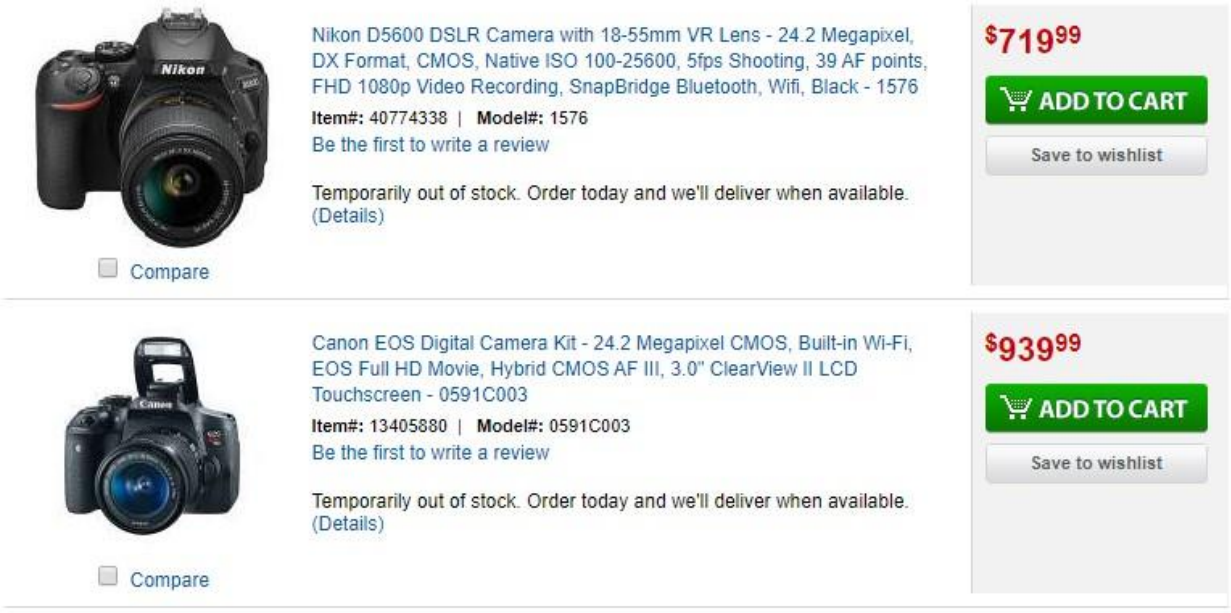
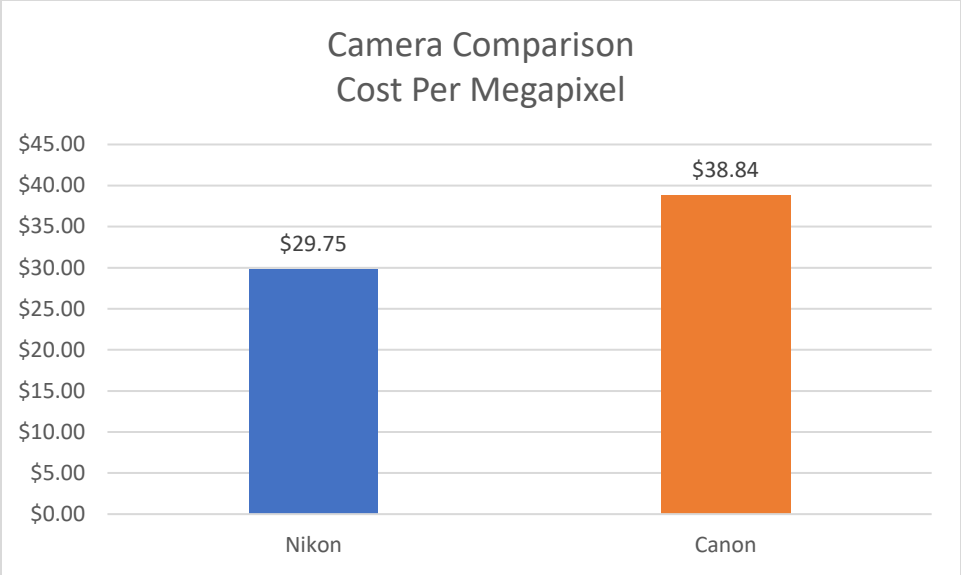


Figure 1 (Direct, 2019)



The above image, Figure 1, is a couple of similar "better" cameras from both Nikon and Cannon. The Cost per pixel is demonstrated in the graph. Both cameras offer similar features such as:

1. 24.2 Megapixels
2. Touchscreen display
3. WIFI built in
4. 1080p video recording

The large difference in these two comes down to price. While Nikon is less expensive than the Cannon, Nikon typically doesn't have as many of the photography filter features and extras that Cannon would include standard. (Techradar, 2019).

Desktop Computers

Laptops and all in ones are good for their space saving features and mobilities, but if you're really looking for an investment piece of technology than the desktop computer reigns

supreme. Desktops offer the most versatility in options and capabilities, while also being capable of allowing upgrades through hardware at future dates. Much like the camera's, there are two brands of processors when it comes to computers. AMD and Intel chipsets are the central processing units or CPUs for computers.

Each has it bonuses, and each has it flaws. AMD typically has more customizable features but lacks performance. Intel doesn't allow a lot of customization, but has better performance, and typically comes with a higher overall price. For these examples, the intel chipsets will be preferred, because the CPU customization won't be required.

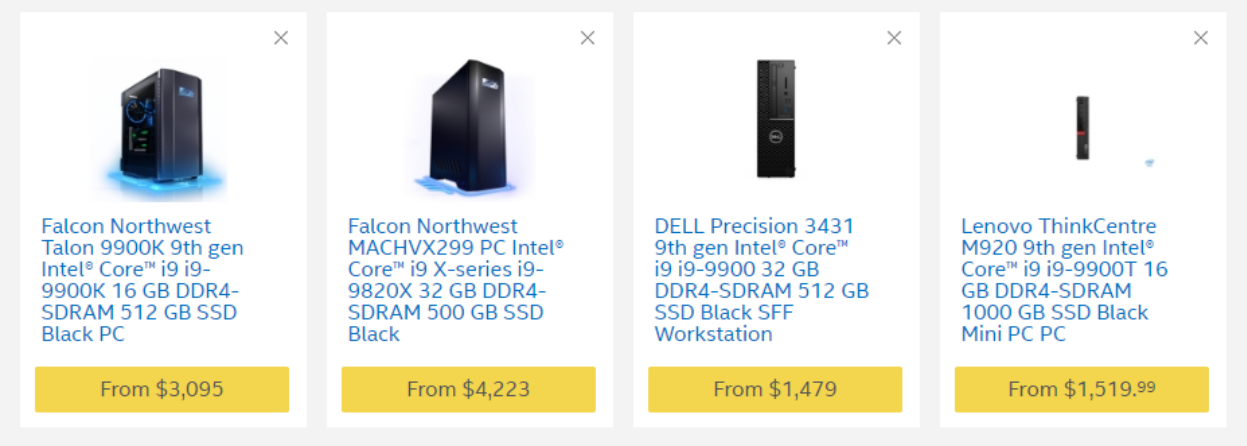
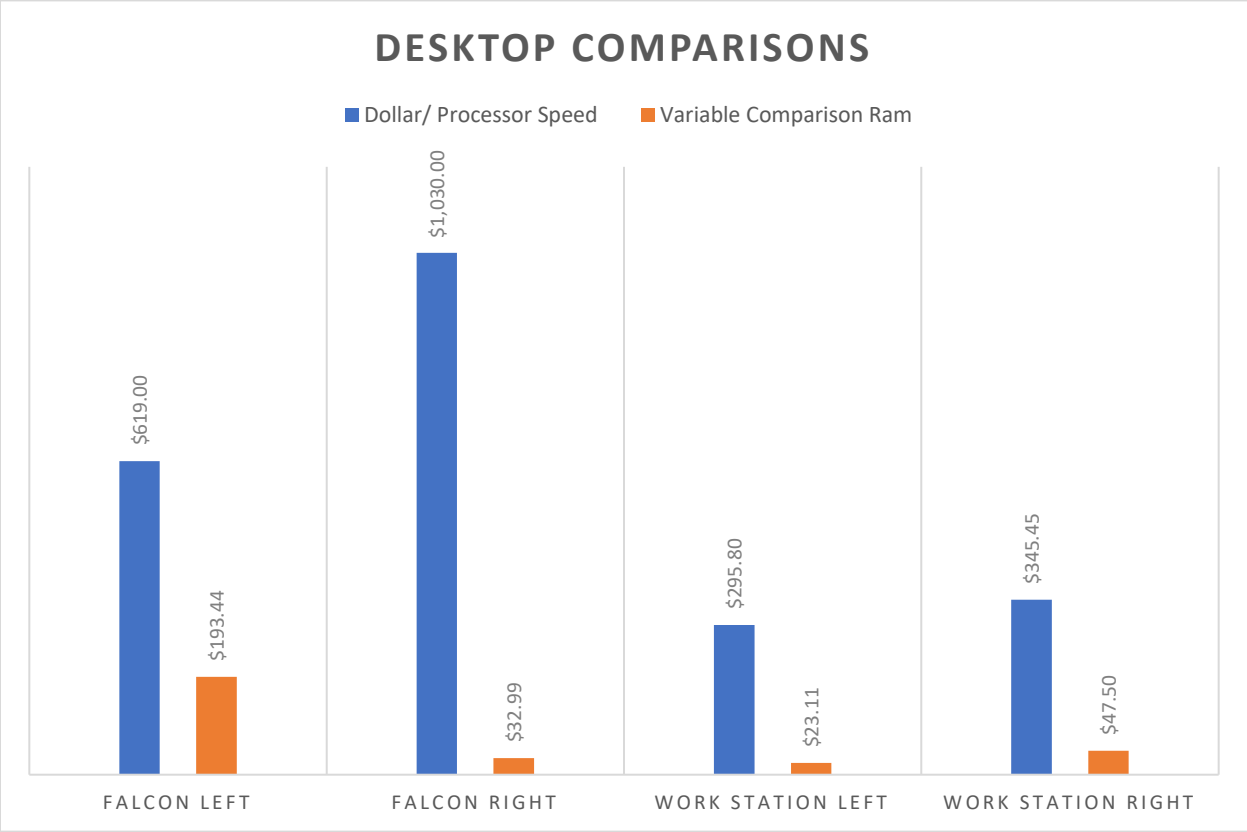


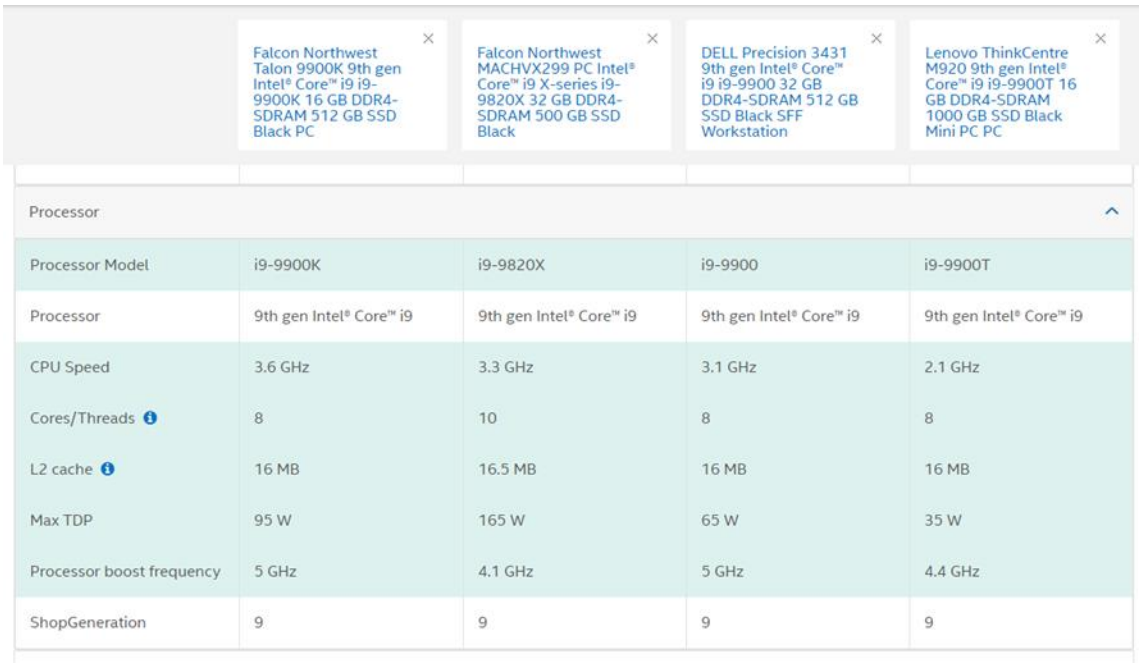
Figure 2 (Intel, 2019)

The above image, Figure 2, is 4 intel-based computers ranging in price based on requirements. The two on the left are heavy into graphics-oriented hardware. Standard uses for those would be gaming and high visual editing software. These would be preferred if there was a big requirement for graphics streaming needed. The two on the right are more of a workstation setup and would work well if the amount of graphics required was needed less.

They serve a purpose more suited for data entry and processing only. See Figure 3 for the details on Graphics information.

The following graph shows some calculations with the processing speed and ram vs the price per computer. In this instance, the lower each score, the better. So, of the high graphics computers, the Falcon Left is the better collective value. Likewise, the Left Work Station is the better value all together.





	Falcon Northwest Talon 9900K 9th gen Intel® Core™ i9 i9-9900K 16 GB DDR4-SDRAM 512 GB SSD Black PC	Falcon Northwest MACHVX299 PC Intel® Core™ i9 X-series i9-9820X 32 GB DDR4-SDRAM 500 GB SSD Black	DELL Precision 3431 9th gen Intel® Core™ i9 i9-9900 32 GB DDR4-SDRAM 512 GB SSD Black SFF Workstation	Lenovo ThinkCentre M920 9th gen Intel® Core™ i9 i9-9900T 16 GB DDR4-SDRAM 1000 GB SSD Black Mini PC PC
Processor				
Processor Model	i9-9900K	i9-9820X	i9-9900	i9-9900T
Processor	9th gen Intel® Core™ i9	9th gen Intel® Core™ i9	9th gen Intel® Core™ i9	9th gen Intel® Core™ i9
CPU Speed	3.6 GHz	3.3 GHz	3.1 GHz	2.1 GHz
Cores/Threads	8	10	8	8
L2 cache	16 MB	16.5 MB	16 MB	16 MB
Max TDP	95 W	165 W	65 W	35 W
Processor boost frequency	5 GHz	4.1 GHz	5 GHz	4.4 GHz
ShopGeneration	9	9	9	9

Figure 3 CPU Comparison (Intel, 2019) Upper

	Falcon Northwest Talon 9900K 9th gen Intel® Core™ i9 i9-9900K 16 GB DDR4-SDRAM 512 GB SSD Black PC	Falcon Northwest MACHVX299 PC Intel® Core™ i9 X-series i9-9820X 32 GB DDR4-SDRAM 500 GB SSD Black	DELL Precision 3431 9th gen Intel® Core™ i9 i9-9900 32 GB DDR4-SDRAM 512 GB SSD Black SFF Workstation	Lenovo ThinkCentre M920 9th gen Intel® Core™ i9 i9-9900T 16 GB DDR4-SDRAM 1000 GB SSD Black Mini PC PC
Graphics				
Integrated Graphics	Y		Y	Y
Graphics Controller	Intel® UHD Graphics 630		Intel® UHD Graphics 630	Intel® UHD Graphics 630
On-board graphics adapter model	Intel® UHD Graphics 630		Intel® UHD Graphics 630	Intel® UHD Graphics 630
Discrete graphics adapter model	NVIDIA GeForce RTX 2060 SUPER	NVIDIA® GeForce RTX™ 2060	NVIDIA® Quadro® P620	Not available
Discrete graphics memory type	GDDR6	GDDR6		
Discrete graphics adapter memory	6 GB	6 GB	2 GB	
Number of discrete graphics adapters			1	

Figure 4 Ram Comparison (Intel, 2019)

These desktops would need to have some form of a monitor. Considering the nature of using a camera, the imagery would be nice to have somewhere near the higher end for these monitors. It would also allow for increased capability usage later. Some of the wants when it

came to monitors should be LED displays 24" +, with 1fps, and 2 HDMI ports minimum. With the desktops above, if you chose the high graphics style, you'd be able to attach multiple devices through the monitor for easier graphics updates or streaming. You could also add a secondary monitor for the graphics-based desktops, which would be handy in video/ imagery editing.

Figure 5 (Frys, 2019) 279.99

Figure 6 (Frys, 2019) 249.99

The largest difference in these two monitors is the price and manufacturer. While the price is less expensive for the monitor featured in figure 6, its manufacturer Benq is less known. Samsung (Figure 5) is a larger more trusted company, so their design and features should be more of an asset to the products overall feel and functionality. They both are 28" monitors that feature 4k UHD screens, 1fps rate, and two HDMI ports.

None of the computers featured here came with Microsoft office directly, you'd have to select it as an add on package when purchasing. They will come with peripheral equipment

that's required for the usage of these computers. With these being Intel based platforms, they will come with a Windows based operating system, so any add on type software from Microsoft should be easily integrated with them. There is an option of foregoing the Microsoft Office Suite, as it can be pricey. Google offers a Google Docs option for all programs that are similar in functionality to Microsoft offerings.

Printers

While most people would prefer a LaserJet printer for its ink usage and speed in document printing, if the intentions of the printer are to do photos, then the inkjet reigns supreme for quality. LaserJet's don't typically perform well with printing on glossy imagery paper or some specialty sized papers. Inkjets on the other hand can be a lot more expensive because the cost of ink. An option for either style of printer would be a "Super Tank" printer. These are the printers that have refillable reservoirs as opposed to the replacement cartridges (Consumer Reports, 2019).

The argument could be made to get individual pieces of equipment for scanning, faxing, and printing, but in considering the lack of tech savviness, the comparisons will be based solely around all-in-one printers. These vary drastically by what applications you'd see as most fitting, but we'll look at the top of what could be considered the best in their class according to consumer reports ratings (Consumer Reports, 2019).

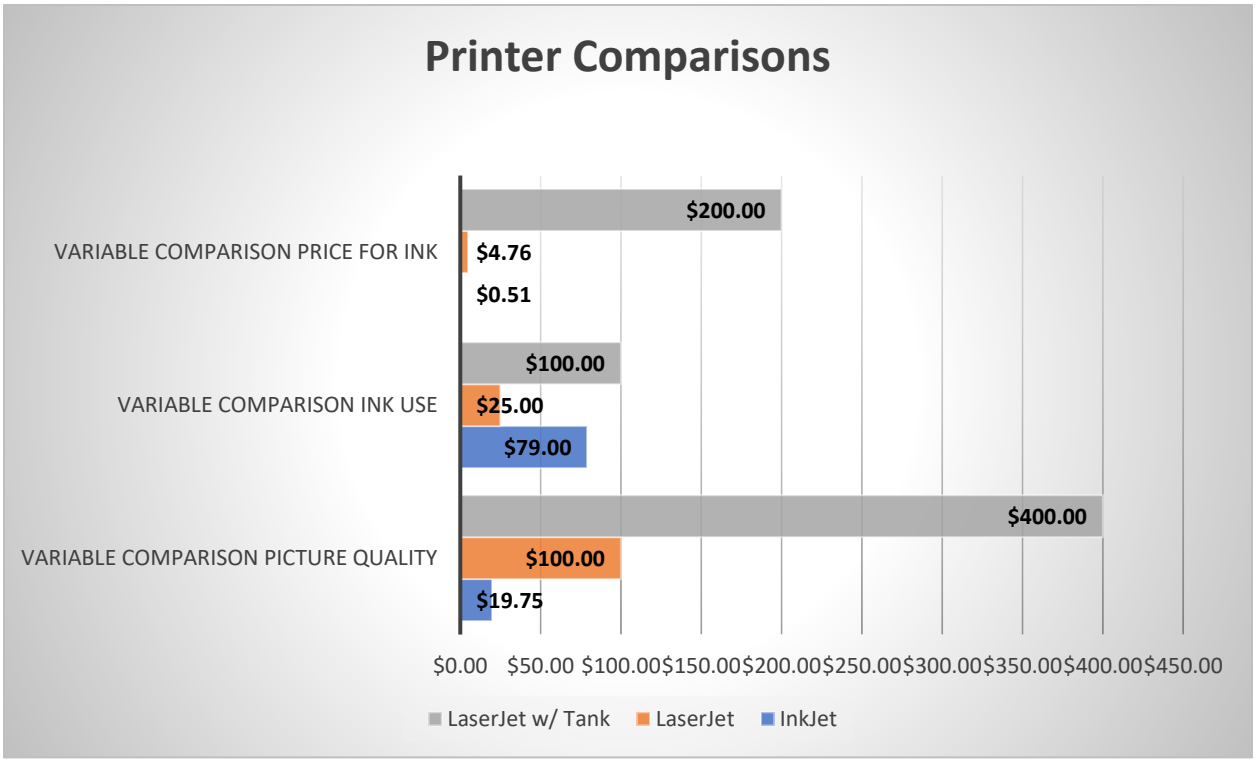
In Figure 7, you can see the comparison criteria for the three types of printers. The printer on the left is an inkjet, the middle is a LaserJet, and the right is a LaserJet with a super tank. If Ink costs are the main issue, the right printer would be the way to go, and would

eventually pay for itself on ink savings. The middle printer has a fair price and is also ink efficient. The left printer is horrible with ink, but, yields the greatest picture quality. If this printer is meant to be an office used product, then the middle printer would likely be the best option, unless the initial investment is not an issue in which the right printer would be boss.

	 59 **Canon** PIXMA TR7520 $79.00 Shop Remove from Compare	 79 **Brother** HL-L2395DW Recommended $99.99 Shop Remove from Compare	 56 **Epson** Ecotank ET-M3170 $399.99 Shop Remove from Compare
Ratings			
Overall score (Out of 100)	59 Good	79 Very Good	56 Good
Text quality	Good	Excellent	Excellent
Text speed	Excellent	Excellent	Excellent
Graphics quality	Good	Fair	Fair
Photo quality	Excellent	N/A	N/A
Maintenance ink use	Poor	Excellent	N/A
Scan quality	Very Good	Very Good	Very Good
Ink cost/year	155	71	2

Figure 7 Printer Comparison (Consumer Reports, 2019)

If this printer is meant to be an office used product then the middle printer would likely be the best option, unless the initial investment is not an issue, in which the right printer would be boss. If the photo printing is the main concern, then the left printer is by far the best option. The left printer is also the lowest initial investment for the printer itself.



The Graph Shows each of the Printers with their respective calculated costs. In each of these cases, the lower the value, the better. Except in the Comparison for ink price. The higher the value the better cost savings it would have over its lifetime. You can see clearly that the LaserJet with a Tank would pay for itself in approximately 2 years' time, while the inkjet would most likely never truly pay for itself.

Summary

While the choices for computers, cameras, and printers is immense, when broken down to what the most important features are, its not difficult to find just a couple of options for them. As it were, the best options for a photo related setup (from taking the photo to editing to printing) the suggestions would drive you towards the Cannon Camera, Lower grade Falcon,

with a Samsung monitor and inkjet printer. These would be the style of setup that a person would benefit from for a photography setup.

If the setup was going to be more orientated to an office management style system, the Nikon Camera, Dell precision 3431 workstation, Samsung monitor, and either of the LaserJet printers would work prefect. The decision, in this case, would be how much to spend up front or over long term.

Works Cited

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