

# TABLET COST OF OWNERSHIP ANALYSIS: INTEL-POWERED HP ELITEPAD 1000 G2 VS. IPAD AIR AND SAMSUNG GALAXY NOTE

# Save up to \$360

with the Intel® processor-powered HP ElitePad 1000 G2



Run Microsoft® Office applications natively and avoid pricey VDI

TOTAL COST OVER TWO YEARS:



Businesses purchasing tablets are interested in two things: providing their employees with robust tools and getting the most for their money. When selecting from the many tablets on the market, it is essential to consider not only the initial hardware investment but also the total cost of ownership during the period the device will be in use. Sometimes, a higher purchase price is offset by savings in other areas.

Principled Technologies analyzed the two-year total cost of ownership of three tablet devices workers would use to perform Microsoft Office tasks: the Intel Atom® processor Z3795-powered HP ElitePad 1000 G2, the Apple iPad Air, and the Samsung Galaxy Note 10.1 2014 Edition. We found that despite having the highest purchase price, the HP ElitePad 1000 G2 had a lower TCO than the other tablets because it runs Microsoft Windows 8.1® and can therefore run Microsoft Office applications and other Windows applications natively. The other two tablets, which run iOS and Android™ respectively, need another way to run these applications, such as the virtual desktop infrastructure (VDI) we include in our analysis. The cost of the VDI software, Citrix® VDI-in-a-Box™, and a Virtual Desktop Access (VDA) subscription for Microsoft Windows more than offsets the hardware savings.

The two-year total cost of ownership for the HP ElitePad 1000 G2 was \$1,898, 14.2 percent less than the Apple iPad Air cost of \$2,212 and 15.9 percent less than the Samsung Galaxy Note cost of \$2,258. These savings can add up.



A PRINCIPLED TECHNOLOGIES TEST REPORT

Commissioned by Intel

JUNE 2014

## PURCHASE PRICE IS ONLY PART OF THE STORY

We analyzed the costs a business would incur by providing workers with the following three tablets, on which they would work using Microsoft Office applications:

- HP ElitePad 1000 G2 (64GB Wi-Fi only)
- Apple iPad Air (64GB Wi-Fi only)
- Samsung Galaxy Note 10.1 2014 Edition (32GB Wi-Fi only) with supplemental 32GB SD card

We found that despite its greater purchase price, the Intel-powered HP ElitePad 1000 G2 provided the lowest TCO because it does not require a VDI solution to run Microsoft Office applications. See Figure 1 for a breakdown of TCO for the three tablets.

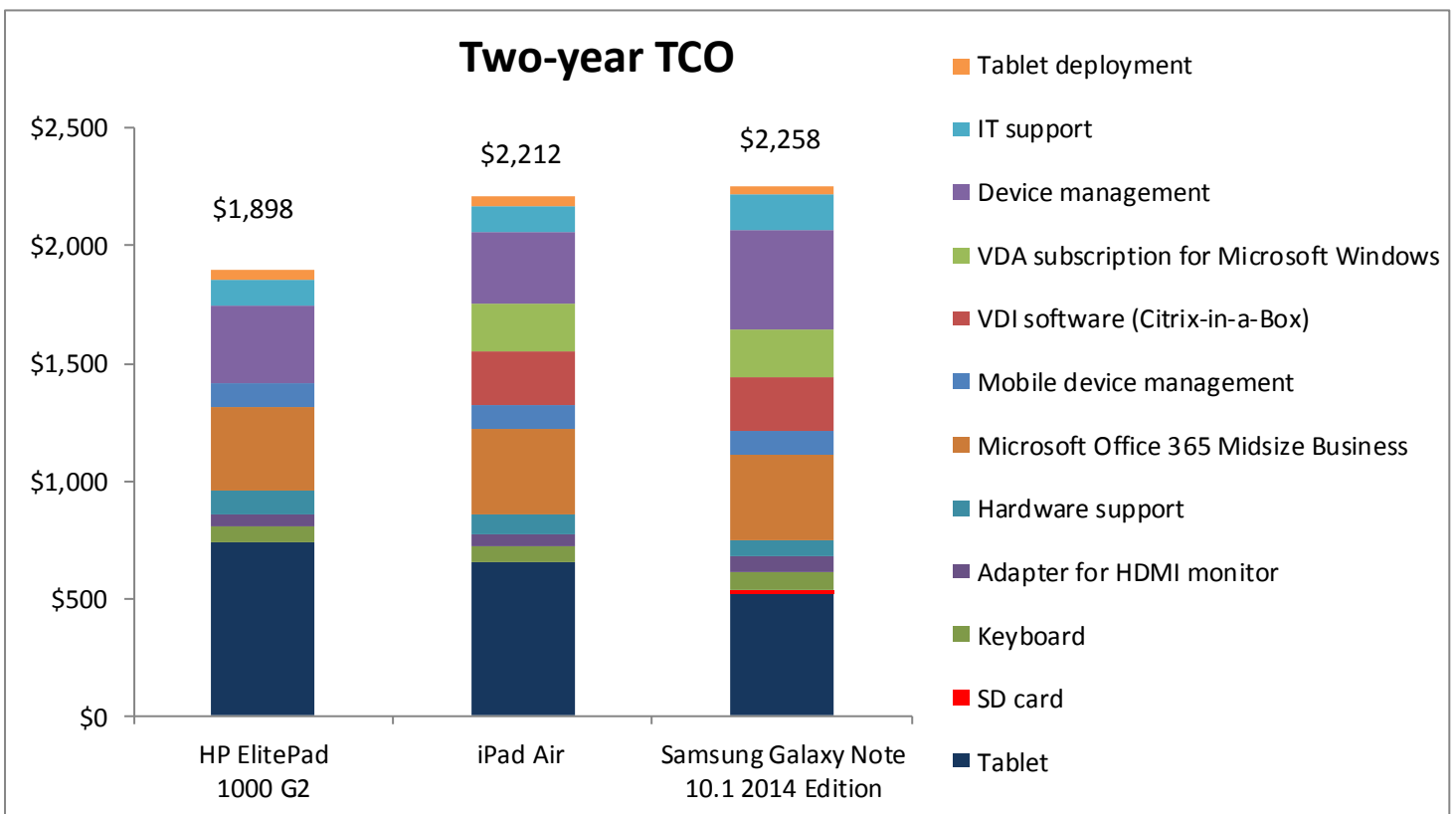


Figure 1: Two-year TCO for the three tablets. Lower numbers are better.

## RUNNING PRODUCTIVITY APPLICATIONS IN THE MODERN OFFICE

With Microsoft boasting an over 90 percent share of the office productivity market, we assume that employees in most businesses rely on Microsoft Office tools to perform their work and to collaborate and communicate within the organization and with clients. Access to Microsoft Windows on their primary computing device is essential for these employees to be productive.

The HP ElitePad 1000 G2 comes with Windows 8.1 installed. A subscription to Microsoft Office 365™ provides these systems with multiple ways to run their Word, Excel®, and PowerPoint® productivity applications: (1) from their local desktop with a Microsoft Office 2013 installation that is included with Office 365, (2) from the cloud with the Office 365 suite, and (3) via a Web browser with Office Online. Because the iPad® and Android tablets in our analysis run non-Windows operating systems, the workers who use them have fewer and less-capable options. The iPad and Android tablets can access Office Online. iPad users can launch Office for iPad, which includes Word, Excel, and PowerPoint. These programs offer fewer features than Office 2013 or Office 365. With these programs, incompatibilities with other Microsoft Office versions can lead to problems, such as introducing changes in page and figure layouts and files not saving all content correctly.

### VDI in the workplace

VDI offers a way around those incompatibilities. It serves Microsoft Office applications to workers on their tablets (or on other devices) from Windows desktops located in virtual machines on servers in the data center. This version of Office gives workers the same Office 2013 features they would have on a Windows desktop system—they can view, edit, and save documents, spreadsheets, and presentations from their non-Windows devices. Citrix and VMware® are the leading VDI vendors. Each offers multiple VDI products. We chose the Citrix VDI-in-a-Box solution because it is a fast way for businesses to get up and running with VDI.

## COST ANALYSIS

Figure 2 provides more details on our cost analysis.

|  |   |
|--|---|
| <b>Tablet</b>  | We used the price as of 6/24/14 after discounts from the HP site for the HP ElitePad 1000, and the prices from Amazon.com for the other tablets. We chose 64-bit Wi-Fi-only versions of the HP ElitePad 1000 and the iPad Air. The Samsung Galaxy Note 10.1 2014 Edition comes in 16-bit and 32-bit versions only. We chose the 32-GB Wi-Fi only edition and supplemented it with a 32GB SD card to match the storage of the other two devices. |
| <b>Keyboard</b>                                      | We included the same universal keyboard for all of the devices.   |
| <b>Adapter to connect to HDMI monitor</b>            | When they are at their desks, workers prefer to use a larger screen than these tablets devices provide. The workers will use monitors they already have, but need adapters to connect the devices to the HDMI monitors.   |
| <b>Hardware support</b>                              | We selected a two-year warranty from SquareTrade®, a company that provides extended warranty service and includes accidental damage protection in its policies. Vendors or storefronts offer a variety of support agreements and warranties with different levels of protection and costs. We kept it simple and fair by going to a single source for all three devices.  |
| <b>Office 365</b>                                    | We included a subscription to Microsoft Office 365 for each of the devices.   |
| <b>Mobile Device Management MDM subscription</b>     | We included the two-year cost of a subscription for a cloud-based MDM from AirWatch®.   |
| <b>Management costs</b>                              | We included costs to manage the devices with the MDM software.  |
| <b>IT costs</b>                                      | We included costs for help desk support, break-fix support, and desk-side repair.   |
| <b>Deployment costs</b>                              | We included a \$40 cost to cover the IT staff time to deploy each tablet.   |
| <b>VDI solution for the iPad and Android devices</b> | We included software costs only. We included a Citrix VDI-in-a-Box license and support agreement and a Microsoft Virtual Desktop Access (VDA) subscription.   |
| <b>Citrix VDI-in-a-Box</b>                           | We included one-fifteenth of the cost of a \$2,975 15-client pack, which includes one year of support. We added in the cost of a second year of support at \$35.  |
| <b>VDA subscription for Microsoft Windows</b>        | We included a Microsoft VDA subscription for two years at \$100 per year, per device. The non-Windows-based tablets require the VDA subscription to access a copy of Windows on the server.   |

Figure 2: Details of our cost analysis.

## Our assumptions

In this section, we describe the assumptions underlying our analysis.

- The business is considering these three tablet models as a primary device for some of their workers and wants a two-year TCO analysis to compare the devices.
- The business wants a 64-GB Wi-Fi-only device. If the device supports only 32 GB, they will add a 32GB SD card.
- The business will purchase two-year warranty for the devices from SquareTrade.
- Workers using these new devices will need to run the same Microsoft Office, Microsoft Outlook, and other Windows software applications as other workers in the business. The company will provide access to the software by installing it on the Windows 8.1 operating system on the HP ElitePad 1000. The iPad and Android devices would get access to the same software on virtual desktops in the data center. The business has chosen Citrix VDI-in-a-Box as their VDI solution. We include only software costs for the VDI solution, though in practice, the business would incur additional hardware, software, and support expenses to run this solution on servers in their data center.
- The business purchases an external keyboard for each device.
- The business manages the devices with a mobile device management (MDM) solution.
- Software costs include a Microsoft Office 365 Midsize Business subscription and an AirWatch MDM subscription for each device.
- Costs include VDI software license and support and a Microsoft VDA license for the non-Windows devices.

## CONCLUSION

Businesses are increasingly purchasing tablets for their employees. To be truly useful, these devices must be able to run Microsoft Office applications well. When selecting among the many tablets on the market, it is essential that businesses consider not only the cost of the devices themselves, but also any additional investment necessary to make these devices fully functional for Office applications.

We analyzed the two-year total cost of ownership for the Intel-powered HP ElitePad 1000 G2, the Apple iPad Air, and the Samsung Galaxy Note. The iPad and Galaxy Note both required a way to run Microsoft Office applications—in our model, they used Citrix VDI-in-a-Box software. Because the HP ElitePad runs Windows 8.1, it does not require this additional investment.

The two-year total cost to provide workers with full access to Microsoft Office applications on a tablet was \$1,898 for the Intel-powered HP ElitePad 1000 G2. This is 14.2 percent less than the Apple iPad Air cost of \$2,212 and 15.9 percent less than the Samsung Galaxy Note cost of \$2,258. These numbers make the Intel-powered HP ElitePad 1000 G2 a very strong choice for any business.

## APPENDIX A – DETAILED PRICING

Figure 3 provides detailed pricing information upon which we based our analysis.

|   | HP ElitePad 1000 G2 (64GB Wi-Fi only) | iPad Air 64GB (Wi-Fi only) | Samsung Galaxy Note 10.1 2014 Edition (32GB Wi-Fi only) w/ 32GB SD card | Notes  |
|---|---------------------------------------|----------------------------|---|--|
| <b>Hardware and support</b>               |                                       |                            |   |  |
| Tablet                                    | \$739.00                              | \$654.99                   | \$519.00  | The tablet is a primary device managed with an MDM.  |
| SD card                                   |                                       |                            | \$19.63   | The Samsung Galaxy Note 10.1 2014 Edition comes in 16-bit and 32-bit versions only. We chose the 32-GB Wi-Fi only edition and supplemented it with a 32GB SD card to match the storage of the other two devices. |
| Keyboard                                  | \$69.99                               | \$69.99                    | \$69.99   | <a href="http://www.zagg.com/universal-tablet-keyboard/8100">www.zagg.com/universal-tablet-keyboard/8100</a>   |
| Adapter to connect to HDMI monitor        | \$49.00                               | \$49.00                    | \$65.99   | We selected an adapter from each vendor's website.   |
| Hardware support (SquareTrade 2-year )    | \$96.79                               | \$83.63                    | \$74.47   | SquareTrade provides two-year drops and spills warranties.   |
| <b>Hardware and support subtotal</b>      | <b>\$954.78</b>                       | <b>\$857.61</b>            | <b>\$749.08</b>   |  |
| <b>Software and support</b>               |                                       |                            |   |  |
| Office 365                                | \$360.00                              | \$360.00                   | \$360.00  | Necessary for iPad and Galaxy Note but also used for HP ElitePad, because, over 2 years, Office 365 at \$12 or \$15 a month is cheaper than \$399 for Office 2013.   |
| MDM 2 year price (AirWatch cloud)         | \$102.00                              | \$102.00                   | \$102.00  | AirWatch is per device.  |
| VDI software (Citrix VDI-in-a-Box)        | N/A                                   | \$233.33                   | \$233.33  | VDI-in-a-Box (based on price for 15-pack with one year support) + estimate \$35 for second year support.   |
| VDA subscription for Microsoft Windows    | N/A                                   | \$200.00                   | \$200.00  | \$100 per year per device retail.  |
| Device management                         | \$326.00                              | \$309.70                   | \$423.80  | Costs for IT to manage and secure devices.   |
| IT support                                | \$115.00                              | \$109.25                   | \$149.50  | Our estimate of help desk and break-fix repair costs.  |
| Tablet deployment                         | \$40.00                               | \$40.00                    | \$40.00   | Costs to deploy the devices to users.  |
| <b>Total</b>                              | <b>\$1,898</b>                        | <b>\$2,212</b>             | <b>\$2,258</b>  |  |
| Cost difference (compared to HP ElitePad) |                                       | \$314.11                   | \$359.93  |  |
| Percentage savings for HP ElitePad        |                                       | 14.2%                      | 15.9%   |  |

Figure 3: Detailed pricing for the three tablet solutions.

## Description of our analysis

We calculated management costs starting with the assumption that one IT staff member could use MDM software to manage 500 Windows tablets running Microsoft Office 2013 applications installed on the desktop. The iPad, which would not have locally installed Microsoft Office software, would be slightly easier to manage. We estimated its management costs at 95 percent of those of the Windows tablet. Android devices can be difficult to manage because Google does not control software updates; the device vendors do. As a result, critical updates do not always reach devices quickly. Each vendor can customize the operating system, so if IT supports multiple Android device types, IT may rely on a security feature that is on one device only to find it lacking on another device. We found these devices to be more difficult to manage, and calculated the costs to manage them at 130 percent of the costs of the Windows device.

We also calculated IT costs. We estimated IT costs at \$115 for the Windows tablet. Many of these tasks, such as backing up and restoring images, can be done via the MDM and run into the same problems as with the management tasks. We used the same multipliers to calculate IT costs for the other devices. These are the costs to provide help desk support, deal with broken devices, and perform on-site repairs. For broken devices, IT would back up the device if they could, send it off to the SquareTrade repair location, provision a temporary replacement laptop, and redeploy the repaired device. They would do whatever repairs they could on site to avoid that process and the user downtime that a broken device can cause.



## ABOUT PRINCIPLED TECHNOLOGIES



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