Comparative Setup and Image Quality Evaluation

HP Smart Tank Plus 655 vs.
Competitive Inkjet Models

OVERALL PERFORMANCE RATINGS

<table>
<thead>
<tr>
<th></th>
<th>HP Smart Tank Plus 655</th>
<th>Brother DCP-T510W</th>
<th>Canon PIXMA G3610</th>
<th>Epson ET-2700</th>
<th>Epson ET-2710</th>
<th>Epson L6160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup &amp; Installation</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print Quality – Plain Paper</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print Quality – Photo Paper</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copy Quality</td>
<td>=</td>
<td>=</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed Document Speed</td>
<td>=</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>4x6 Photo Speed</td>
<td>=</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

✓ indicates an advantage
= indicates parity
Ratings above are with respect to each other.
**Test Objective**

Keypoint Intelligence - Buyers Lab (BLI) was commissioned by HP Inc. to conduct a comparative evaluation of speed, image quality, and setup and installation of the HP Smart Tank Plus 655 inkjet model versus the Brother DCP-T510W, Canon PIXMA G3610, Epson ET-2700, Epson ET-2710, and Epson L6160.

**Executive Summary**

**The HP Smart Tank 655 Plus Offers the Best In-Class Ink Tank Experience**

Being a mature printing technology, inkjet printers currently available in the market are plentiful, which can make it difficult for users to decide on the best printer to suit their needs. While speed and price are important, users should take into account the overall user experience and feature set to decide if a printer is the best choice for them.

To determine if the HP Smart Tank Plus 655 could be said to offer the best in-class user experience, Buyers Lab tested the model in a head-to-head comparison against top selling in-class models from Brother, Canon and Epson, evaluating setup and installation, image quality on plain and photo paper, and also for printing and scanning via the OEM mobile print app. In their assessment, Buyers Lab analysts found the HP Smart Tank Plus 655 to be easy to set up and use, taking the least amount of time to perform physical setup, load inks, install software and print a test page. In addition, printing and scanning from the HP Smart App was simpler and could be accomplished in fewer steps than competitive apps, thanks in part to the high level of customization available. And both black and color prints produced by the HP Smart Tank Plus 655 were noticeably better than competing output, with cleaner lines, smoother coverage and more vibrant colors, whether printing on plain or photo paper.

Based on its combination of a simple and clean setup experience, intuitive printing and scanning, both from the PC and from the mobile app, and superior image quality, Buyers Lab feels the HP Smart Tank Plus 655 printer offers the best in-class ink tank experience.

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1 Best in-class ink tank experience compared to majority of leading non-HP OEM CISS ink tank platforms <$449.99 USD. Market share as reported by IDC CYQ1 2019 Hardcopy Peripherals Tracker, 2019Q1 Release. Test results should be similar for same platform with different model numbers using the same OEM ink formula. HP Smart Tank printers are also branded as HP Smart Tank Plus in some regions. Detail in May 2019 hands-on lab report by Keypoint Intelligence - Buyers Lab using OEM inks. Areas of experience tested for comparison include install, printed image quality on plain & photo paper, mobile printing & scanning, and feature set. See http://www.keypointintelligence.com/hpsmarttankplus.
Key Advantages

Simple Setup and Clean Ink Filling

BLI technicians found the HP Smart Tank Plus 655 to be much simpler to set up, and offering a cleaner, faster process for loading inks. The HP printer only requires users to lower the front cover of the printer and open the cap to access the tanks; once the ink bottle is pressed onto the tank nozzle, the bottle will automatically start filling the HP printer ink tank. In spite of having to perform the final step of installing print heads, users of the HP Smart Tank Plus 655 would still be up and running faster, due to the long initialization process required by the competitive units.

Best In-Class Print Quality on Plain and Photo Paper2

Buyers Lab's analysts found that the HP Smart Tank Plus 655 had the greatest advantage in print quality, delivering sharp text, clean lines and vibrant colors, even in draft mode. Output from the Epson models produced in draft mode was washed out and barely usable. Key advantages of the Smart Tank Plus 655 include brighter colors, smoother lines and text, more consistent ink fill and better clarity of fine details, while output from the Epson units appeared fuzzy, washed out and flat/lacking definition.

Intuitive and Flexible Mobile App Simplifies User Experience through Customization and Workflow Shortcuts

Modern office workers need to remain productive, even when they are away from their PC, often relying on smartphones and tablets to access and print files remotely. So it’s important to have access to an intuitive and feature rich mobile app. Buyers Lab analysts evaluated the overall user experience for the HP Smart App versus the top in-class competitors for home and home office.

In the assessment, Buyers Lab analysts found the HP Smart App to be an intuitive and flexible choice for mobile printing and scanning. While all of the apps were easy to use, the HP Smart App provides the best overall user experience, thanks to its combination of strong feature set, and excellent usability. The HP interface is modern and graphical, and easier to use than the competing apps, providing at-a-glance status on the main screen, as well as access to detailed help. A key differentiator is the fact that users can customize the main screen of the HP Smart App to have one-touch access to their most common functions. Not only does printing from the app require fewer steps using the standard method, but users can create workflow shortcuts, known as Smart Tasks, to automate printing and scanning tasks.

2 Best in-class plain paper and photo print quality using OEM inks compared to majority of leading non-HP OEM CISS ink tank platforms <$449.99 USD. Market share as reported by Q1 2019 Hardcopy Peripherals Tracker, 2019Q1 Release. Test results should be similar for same platform with different model numbers using the same OEM ink formula. HP Smart Tank printers are also branded as HP Smart Tank Plus in some regions. Detail in May 2019 hands-on lab report by Keypoint Intelligence - Buyers Lab using OEM inks. See http://www.keypointintelligence.com/hpsmarttankplus.
Setup & Installation

When compared to five comparable in-class inkjet models, the Smart Tank Plus 655 offers a cleaner and neater procedure for filling ink due to both the design of the printer's ink tanks and the ink refill bottles.

<table>
<thead>
<tr>
<th></th>
<th>HP Smart Tank Plus 655</th>
<th>Brother DCP-T510W</th>
<th>Canon PIXMA G3610</th>
<th>Epson ET-2700/ET-2710/L6160</th>
</tr>
</thead>
<tbody>
<tr>
<td>The HP ink bottles</td>
<td>The ink bottles for the Brother model have a small nozzle with an attached cap; the nozzles do not have an internal seal and are not spill-proof.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The ink bottles for the Canon model have a twist-off cap covering the ink nozzle. The nozzles do not have an internal seal and are not spill-proof.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Under the caps, there is a seal that must be removed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Canon PIXMA G3610 has two printheads that must be installed before the ink is loaded. They are easy to install via the top-loading access.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The ink bottles for all three Epson models are sealed in individual plastic bags and have a twist-off cap covering the ink nozzle. The nozzle has an internal seal to limit spilling. Because of the screw caps, there is no foil seal under the nozzle.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The HP ink bottles have a simple flip-top design that lets users quickly and easily fill ink.

The bottles have a seal under the cap which includes a plastic tab for easy removal. The nozzle has an internal seal to limit spilling.
Because the HP Smart Tank Plus 655 is designed with an ink tank that fits into the nozzle of the bottle, filling the tanks are clean, easy and mistake-proof. In addition, the design of the bottle and how it fits onto the printer makes filling the tanks very fast, as the ink is quickly drawn from the bottle into the ink reservoir.

Once the stopper is removed, the bottle can be inserted and the ink squeezed into the tank. Due to the small opening in the bottle, users must repeatedly squeeze the bottle to get all of the ink out.

Users can lift the cover, remove the stopper and fill the ink tanks. Users must repeatedly squeeze the bottle to empty the ink into the tanks.

Users can lift the cover and fill the ink tanks. The bottle sits upright in the port and begins to empty as soon as the bottle into the tank.
While the HP Smart Tank Plus 655 requires the final step of removing a protective cover and installing the printheads, HP users would still be up and running before Canon, Brother and Epson users, because of how quickly the device initializes.

After ink is loaded, the unit goes through an initialization and cleaning routine that takes 15 to 20 minutes. After ink is loaded, the unit goes through an initialization routine that takes 5 to 10 minutes. After ink is loaded, the unit goes through an initialization routine that takes 10 to 15 minutes.

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Image Quality Assessment (Print Mode)

Business users want vibrant colors and clean text and to get the results they expect the first time; if users have to reprint a page because colors are wrong or quality is lacking, they're wasting valuable time and resources. BLI evaluated image quality of all the devices using a series of Buyers Lab proprietary targets, as well as the ISO 24712 test suite, printed in draft and default modes, on 24-lb. multipurpose paper (with ColorLok technology). In addition, two different photos were printed in high quality/photo mode on glossy photo paper.

In Buyers Lab's assessment, the HP Smart Tank Plus 655 had the best overall print quality, with more vibrant colors, smoother coverage in shaded areas, better clarity of fine details and cleaner lines and text. Specific examples can be seen below and on the following pages (printed output was scanned and saved at 300 dpi and saved in JPG format).
In high-quality/photo mode, an image of a brightly colored hot air balloon was most vibrant when printed by the HP Smart Tank Plus 655, showing a good level of brightness and contrast. All of the competitive models produced the green zigzags as a darker shade, while the HP model printed the brighter hue found in the original image.

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In high-quality/photo mode, images printed by the HP Smart Tank Plus 655 were the most vibrant, with a good level of contrast and rich fine details (note the clarity of the flowers in the lower left portion of the photo, as well the depth of the plants in the background). All of the competitive models fell short in vibrancy and clarity when compared to the HP model's output.

Color Text Comparison – Default Mode (Magnified to show detail)

<table>
<thead>
<tr>
<th>HP Smart Tank Plus 655</th>
<th>Brother DCP-T510W</th>
<th>Canon PIXMA G3610</th>
<th>Epson ET-2700</th>
<th>Epson ET-2710</th>
<th>Epson L6160</th>
</tr>
</thead>
</table>

When producing red text on a light blue background, the HP Smart Tank Plus 655 produced darker, sharper text. Text from the Brother model, the Canon model and all three Epson units had some visible jagged edges, while backgrounds showed visible mottling. In addition, output from the Epson models was noticeably lighter than the other models.

Color Text Comparison – Draft Mode (Magnified to show detail)

<table>
<thead>
<tr>
<th>HP Smart Tank Plus 655</th>
<th>Brother DCP-T510W</th>
<th>Canon PIXMA G3610</th>
<th>Epson ET-2700</th>
<th>Epson ET-2710</th>
<th>Epson L6160</th>
</tr>
</thead>
</table>

Though there was some minor banding visible in shaded areas, the HP Smart Tank Plus 655 produced dark, sharp text, even in draft mode. In default mode, text produced by the Canon and Brother models, though it was about as dark as that produced by HP, exhibited visible jagged edges, and the Canon model showed mottling in the colored background. The light blue background was produced as a series of widely scattered dots by all three Epson models.
When producing business graphics in default mode, color production was comparable across all four models, though colors from the Smart Tank Plus 655 were slightly richer, with better production of shade variations. The other inkjet models lost some finer details (no distinct transitions between light and dark shades on the pie chart).
In draft mode, however, colors from all three Epson models were extremely washed out and inaccurately produced (the orange part of the pie chart looks almost yellow), while those from the Smart Tank Plus 655 were still vibrant.

**Black Text Comparison - Default Mode (Magnified to show detail)**

<table>
<thead>
<tr>
<th>Duis</th>
<th>Duis</th>
<th>Duis</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Smart Tank Plus 655</td>
<td>Brother DCP-T510W</td>
<td>Canon PIXMA G3610</td>
</tr>
<tr>
<td>Duis</td>
<td>Duis</td>
<td>Duis</td>
</tr>
<tr>
<td>Epson ET-2700</td>
<td>Epson ET-2710</td>
<td>Epson L6160</td>
</tr>
</tbody>
</table>

Black text printed by the HP Smart Tank Plus 655 was clean with smooth edges; the Canon PIXMA G3610 and Epson L6160 produced text that was slightly more jagged. Text produced by the Brother and the remaining two Epson units was not as dark or cleanly formed and edges of text appeared very jagged.

**Black Text Comparison - Draft Mode (Magnified to show detail)**

<table>
<thead>
<tr>
<th>Duis</th>
<th>Duis</th>
<th>Duis</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Smart Tank Plus 655</td>
<td>Brother DCP-T510W</td>
<td>Canon PIXMA G3610</td>
</tr>
</tbody>
</table>
Black text printed by the HP Smart Tank Plus 655 was dark with slightly jagged edges. Text produced by the Brother and Epson units was light, broken and jagged.

**Line Quality Comparison - Default Mode (Magnified to show detail)**

<table>
<thead>
<tr>
<th>HP Smart Tank Plus 655</th>
<th>Brother DCP-T510W</th>
<th>Canon PIXMA G3610</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epson ET-2700</td>
<td>Epson ET-2710</td>
<td>Epson L6160</td>
</tr>
</tbody>
</table>

In default mode, lines printed by the HP model were noticeably cleaner and smoother.
Line Quality Comparison - Draft Mode (Magnified to show detail)

The HP Smart Tank Plus 655 was significantly better when printing fine lines in draft mode, which were smooth and fully formed. Lines produced by all three Epson inkjet models were light, jagged and broken.
Color Photo Output Comparison - Default Mode (Magnified to show detail)

HP Smart Tank Plus 655  Brother DCP-T510W  Canon PIXMA G3610

Epson ET-2700  Epson ET-2710  Epson L6160

In standard mode, the yellow car printed by the HP Smart Tank Plus 655 is most vibrant with realistic looking highlights and the roofline is clearly delineated from the dark background. Colors from the competitive units look too orange and/or washed out and some banding is visible, especially in the dark background.

Color Photo Output Comparison - Draft Mode (Magnified to show detail)

HP Smart Tank Plus 655  Brother DCP-T510W  Canon PIXMA G3610
In draft mode, the photo of the car printed by the HP Smart Tank Plus 655 is bright with realistic looking highlights and the roofline is clearly delineated from the dark background. While the Canon model had smoother coverage than HP, the yellow car appeared a bit too orange. Colors from the Epson units, especially the dark background, look washed out. Some banding was visible on all output, but this is typical of inkjet technology when printing heavy coverage documents in draft mode.

Color Photo Output Comparison - Default Mode (Magnified to show detail)

In default mode, a photo of pink and yellow flowers printed by the HP model was vibrant, with a good level of depth and detail. Colors from the Canon model were just as vibrant. Output from the Brother model lacked clear definition in the darker flowers, while colors from all three Epson models appeared slightly washed out.
In draft mode, a photo of pink and yellow flowers printed by the HP model was the most vibrant, with a good level of depth and detail. Colors from the Canon model were nearly as vibrant. Output from the other models lacked clear definition and colors appeared washed out, with the Epson L6160 providing the lowest quality of the group.

In default mode, the HP model again produced the most vibrant colors, with the Brother and Canon models following closely. The Epson models again showed less vibrancy and detail compared to the HP and Brother models.

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A photo of a baby in a highchair printed by the HP Smart Tank Plus 655 had good saturation, with clear details and depth. The Canon’s output was a close second, though colors were slightly washed out. Output from the Brother looked flat and washed out, while the Epsons’ output had mottling.

**Color Photo Output Comparison – Draft Mode (Magnified to show detail)**

Even in draft mode, photographic images printed by the HP Smart Tank Plus 655 had a good level of detail, though slightly lighter than in default mode. Output from the Brother and Canon models was slightly washed out, while output from the three Epson inkjets looked flat and very washed out, with lighter colors appearing as a series of scattered dots.
Waterfastness

Black Waterfastness

<table>
<thead>
<tr>
<th></th>
<th>Drip 1</th>
<th>Drip 2</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP Smart Tank Plus 655</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>Brother DCP-T510W</td>
<td>0.12</td>
<td>0.12</td>
<td>0.12</td>
</tr>
<tr>
<td>Canon PIXMA G3610</td>
<td>0.08</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>Epson ET-2700</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>Epson ET-2710</td>
<td>0.19</td>
<td>0.18</td>
<td>0.19</td>
</tr>
<tr>
<td>Epson L6160</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
</tr>
</tbody>
</table>

This test measures the amount of colorant transferred from a printed to an unprinted area when a drip of distilled water is allowed to run across five parallel bars. Five density readings are averaged for two separate drips. The sample is allowed to dry for one hour before the test is performed. One sample is tested at default quality.

No ink transfer was visible when water was dripped across output from the HP Smart Tank Plus 655 and most of the other models. However, there was visible smearing when water was dripped across output from the Epson ET-2710.
**Image Quality Assessment (Copy Mode)**

In copy mode, the HP Smart Tank Plus 655 produced more vibrant colors, smoother coverage in shaded areas, better clarity of fine details and cleaner lines and text. Specific examples can be seen below and on the following pages. Samples were output using default settings on ColorLok paper.

**Color Background Comparison – Default Mode (Magnified to show detail)**

In copy mode, the Canon model was slightly better at producing light-colored shaded backgrounds. The Brother DCP-T510W and the HP Smart Tank Plus 655 produced backgrounds with visible light and dark yellow bands. The HP model also incorrectly reproduced the green leaves, which appeared more gray.
When copying color business graphics, the Canon Pixma G3610 and HP Smart Tank Plus 655 provided the most vibrant output with a good level of detail. In the bird graphic above, the shades of blue are more vibrant, whereas the Brother's and Epson's output appears washed out.
Black Text Comparison – Default Mode on ColorLok Paper (Magnified to show detail)

<table>
<thead>
<tr>
<th>copiers</th>
<th>copiers</th>
<th>copiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP</td>
<td>Brother</td>
<td>Canon</td>
</tr>
<tr>
<td>Smart Tank Plus 655</td>
<td>DCP-T510W</td>
<td>PIXMA G3610</td>
</tr>
<tr>
<td></td>
<td>Epson</td>
<td>Epson</td>
</tr>
<tr>
<td></td>
<td>ET-2700</td>
<td>ET-2710</td>
</tr>
<tr>
<td></td>
<td>Epson</td>
<td>L6160</td>
</tr>
</tbody>
</table>

Copied text from the Canon model was dark and clean, with minimal jaggedness; text from the HP Smart Tank Plus 655 was a very close second for quality. Text produced by the other units was not nearly as cleanly formed and edges of text appeared jagged.

Line Quality Comparison – Default Mode (Magnified to show detail)

The HP Smart Tank Plus 655 produced better fine lines in copy mode, which were darker with smoother edges than what was produced by the Brother, Canon and Epson units.
Mobile Printing & Scanning

Offering a wide breadth of features and functionality, the HP Smart App makes mobile printing very easy, thanks in part to the high level of customization available to users. While all of the mobile apps are generally easy to use, the HP Smart App stands out for providing the ability to create convenient workflow shortcuts, Smart Tasks, to automate printing and scanning tasks.

As seen above, the HP Smart App lets users create and save workflow shortcuts, using the Smart Tasks feature, to help automate repetitive tasks.

User Interface

<table>
<thead>
<tr>
<th>HP Smart</th>
<th>Brother iPrint&amp;Scan</th>
<th>Canon PRINT Inkjet/SELPHY</th>
<th>Epson iPrint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart Tank Plus 650</td>
<td>iPrint&amp;Scan</td>
<td>63010 series</td>
<td>L6160 Series</td>
</tr>
<tr>
<td>Estimated Supplies</td>
<td>PRINT</td>
<td>L6160 Series</td>
<td>Printer is ready</td>
</tr>
<tr>
<td>Print Documents</td>
<td>SCAN</td>
<td></td>
<td>Print Photos</td>
</tr>
<tr>
<td>Copy to Cloud</td>
<td>COPY PREVIEW</td>
<td></td>
<td>Print Documents</td>
</tr>
<tr>
<td>HP Instant Ink / Get Cartridges</td>
<td>MACHINE STATUS</td>
<td></td>
<td>Print from Cloud</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Creative Print</td>
</tr>
</tbody>
</table>
The HP Smart App employs a fully customizable, tile-based user interface. Unlike the other apps in this group, HP Smart’s main screen can be customized to display only the functions that the user prefers, and in what order (under Personalization, users can turn functions on or off and drag them higher on the list of functions). Also unique, users can scroll through each connected device from the top of the screen, rather than accessing devices from a second menu. Cartridge levels are also visible from the main menu. Buttons for adding add new machines, checking alerts on connected devices, and ordering supplies are also available on the main screen by default. Users can access all the available print, scan, and copy functions right from the main menu.

The Brother iPrint&Scan app provides user with access to all the core functions. While users can view the device they are currently connected to, they cannot see device status information until they select the Machine Status icon.

The Canon PRINT Inkjet/SELPHY presents users with access to all the app’s core functionality. While users can see the device they are connected to from the main menu, they can’t see its status or consumables levels.

Epson iPrint also uses a tile-based UI on its main screen. The connected device is displayed along with its status. Users can access all the apps core functionality right from the main menu. However, the interface isn’t customizable.
### Printing

<table>
<thead>
<tr>
<th>HP Smart</th>
<th>Brother iPrint&amp;Scan</th>
<th>Canon PRINT Inkjet/SELPHY</th>
<th>Epson iPrint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing using the Brother iPrint&amp;Scan is simple, which should be expected given its limited feature set. The app enables users to print photos stored in their camera roll (users can also capture an image using their devices phone, and send that image directly to the printer), documents in iTunes or documents that were recently printed from other apps, cloud services (iCloud, Dropbox, Evernote, Google Drive, and OneNote), a webpage, from the device’s clipboard. When printing documents, users can preview images, but they cannot crop or edit the image like in other apps. Users do have access to typical settings, however, like paper size, number of copies (up to 999), layout, and duplex/simplex option. Users can only select page size and the amount of copies when printing photos.</td>
<td>Offering a wide breadth of features and functionality, the HP Smart App makes mobile printing very easy. Dedicated “print from” buttons, plus easy wizard-like job configuration menus make it simple for users to select all the settings they need to print. Users can print documents and photos from their mobile device, box, Dropbox, Evernote, Google Drive, or from a web URL. When printing documents, users can preview before printing, select the page size, simplex/duplex settings, orientation, the range of pages to print, and the number of copies to print (up to 99). When printing photos, users can only rotate and crop the image. Print from box, Dropbox, Evernote, Facebook, Instagram, and Google Drive, plus Print Photo buttons are available to streamline printing processes. Users can also distribute these files to other applications installed on the phone through the print menu.</td>
<td>Canon PRINT Inkjet/SELPHY offers simple mobile print procedures, mostly because of its simple feature set. The app has two buttons for printing: “Photo Print” and “Document Print”. Using the Photo Print, users can preview the image, select the amount of copies to make (up to 999), paper size, media type, border, and grayscale settings. Users have access to all the same settings when printing with Document Print, except they can also set a range for which pages in a document should be printed.</td>
<td>Epson iPrint’s offers simple printing from mobile devices. The app has three print buttons: print photos, print documents, and print from cloud. Users can preview the image, select the number of copies (up to 30), paper size, media type, layout options, print quality, paper source, color mode, whether to print the date, auto correct, and sharpness, plus preview, clear and rotate images before printing. The application can dovetail with Box, Dropbox, Evernote, Google Drive, and Microsoft OneDrive. Users are limited to 30 copies per image. Users can also configure the job to print the date on the image.</td>
</tr>
</tbody>
</table>
## Scanning

<table>
<thead>
<tr>
<th>HP Smart</th>
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</table>

HP Smart enables users to capture documents using their smartphone's camera (images on the camera roll can also be imported into the app) or the scanner of an MFP. Dedicated scan to email and cloud buttons streamlines scanning processes. Scanning with a MFP is simple—users select the source, color, and resolution settings. Documents can be cropped and rotated after scanning. Capturing a document with the camera is easy too, especially when using automated capture settings. The automated capture setting will identify, crop, and capture the image—all the user has to do is point the camera in the direction of the document they want to capture. Documents can also be captured manually, whereby the users lineup the shot and crop the document on their own. Scanned images can be routed to any application accessible from the user's smartphone.

Brother iPrint&Scan has the least scan functionality of all the apps in this group, which also makes it very easy to use. Users click scan, select document size, scan type, and duplex/simplex settings then hit scan. Users can also configure the device to skip blank pages. Once scanning is complete, users can preview the document plus straighten and crop the image. Scanned images can be routed to any destination supported by the user's smartphone. Take note that the Brother iPrint&Scan App doesn't leverage the smartphone's camera or enable users to import images from their camera roll.

The Canon PRINT Inkjet/SELPHY application offers very simple scanning functionality. Like the other apps in this group, it has a dedicated scanning function (using the “smartphone copy” function and their device’s “Send to” functionality as a work around). Users can select document type, color mode and doc size settings before scanning. After scanning is complete, users can preview the document and route it to iCloud, save it locally on the smartphone, email it, or open the scan in a different application on the smartphone.

The Epson iPrint app has two scanning buttons: scan and document capture (capture images using the smartphone's camera or by importing an image from the camera roll). When using Scan mode, users can configure the source (ADF or platen), document size, and image type, and select resolution, brightness, and gamma settings. When scanning is complete, users can save the image in a local folder, in the device's camera roll, or open it in another application on the smartphone. Users can route scanned images to Box, Dropbox, Evernote, Google Drive, and Microsoft OneDrive. When using document capture mode, users can enable or disable the show guidance settings (identifies documents in the camera's viewfinder automatically) and auto shooting. After capturing the image, users can adjust the corners to crop and straighten the image and enhance text (enhanced, more enhanced, and unenhanced options are available), and adjust the color (brightness, contrast, saturation). Once the image is processed, users can apply all the settings that are available in the traditional scan mode. Take note that Epson iPrint App cannot route images capture using Document Capture mode.
Speed Testing (Print Mode)

In Buyers Lab’s speed testing, technicians noted that while the HP Smart Tank Plus 655 was the slowest for printing documents, the HP model was among the fastest of the group when printing high-quality photos on 4x6 glossy photo paper. The Canon model was fastest, printing the photos about 13 to 14 seconds faster, while the Epson models and the Brother model were roughly a minute to a minute and a half slower when printing the same photos.

Time to Print 4x6 Photos (In seconds)

The times above indicate the time it took to print and deliver a 4x6 borderless photo to the output tray. Each image file was sent to a paused queue, with the device in a warmed up and ready state. Timing started when the print queue was released and stopped when the photo completely exited the device. All units were tested using best/photo mode and HP Everyday Semi-Gloss Photo Paper.

Time to Print Word Documents (In seconds)

The times above indicate the time it took to print and deliver a single-page and a four-page Word to the output tray. Each file was sent to a paused queue, with the device in a warmed up and ready state. Timing started when the print queue was released and stopped when the document completely exited the device. All units were tested using default mode on plain paper.
Time to Print PDF Documents (In seconds)

The times above indicate the time it took to print and deliver a single-page and a four-page PDF to the output tray. Each file was sent to a paused queue, with the device in a warmed up and ready state. Timing started when the print queue was released and stopped when the document completely exited the device. All units were tested using default mode on plain paper.

Appendix A: Test Methodology

Test Environment

Testing was conducted under ambient conditions of 68°F to 78°F and 45% RH (+/- 10%), monitored daily by an Extech RH520 temperature/humidity digital recorder and Honeywell Model 61 Seven-Day Temperature/Humidity Chart Recorder, in BLI’s test facility located at 80 Little Falls Road, Fairfield, NJ (U.S.A).

Test Equipment

BLI’s dedicated test network, consisting of Windows 2003 servers, Windows 10 Professional workstations, 10BaseT/100BaseTX network switches and CAT5 cabling, Yokogawa WT210 power meter, Powerstat voltage regulator and ESP D5143NT Transient Voltage Surge Supressor.

Test Models

HP Smart Tank Plus 655, Brother DCP-T510W, Canon PIXMA G3610, Epson ET-2700, Epson ET-2710 and Epson L6160.

Test Methodology

BLI used proprietary image quality test targets printed and copied in default mode and compared density readings and the visual quality across the samples. For speed testing, technicians used two of the three ISO 24734 test targets and a 4x6 photo.
Appendix B: Comparable OEM ink tank platforms/model numbers

**HP Smart Tank 610 and HP Smart Tank Plus 650**
HP Smart Tank 610 in emerging markets; Epson L6170/L6178 series; Epson L6190/L6198 series; Epson L565; Canon G4010; Brother T810W
HP Smart Tank Plus 650 in developed markets; Epson ET-4750; Canon G4610

**HP Smart Tank 530 and HP Smart Tank Plus 570**
HP Smart Tank 530 in emerging markets; Epson L565; Epson L6170/L6178 series; Epson L6190/L6198 series; Canon G4010 Series; Brother T710W
HP Smart Tank Plus 570 in developed markets; Epson ET-3750; Canon G4600/10

**HP Smart Tank Plus 550 and HP Smart Tank 510**
HP Smart Tank 510 in emerging markets; Epson L3150/3158 series; Epson L4150 series; Canon G3010/3810 series; Epson L405; Brother T510W
HP Smart Tank Plus 550 in developed markets; Epson ET-2650; Epson ET-2700 series; Canon G3600/3610
HP Smart Tank 500 in select markets; Epson L3108 series; Epson L3110/3111/3118 series; Epson L380; Canon G2000/2010/2810 series; Brother T310

Appendix C: Full-Page Output Samples

Examples of Color Photo Quality – Print Mode

Colors output produced by the HP Smart Tank Plus 655 were more vibrant than output produced by any of the Epson models. Colors were vibrant and coverage was smooth.
Brother DCP-T510W Color Print Samples (Default, left, and Draft, right)

Colors output produced by the DCP-T510W was slightly more vibrant than the output from the other two Epson models. In draft mode, output was washed out and lacked definition.

Canon PIXMA G3610 Color Photo Print Samples (Default, left, and Draft, right)

Colors output from the G3610 in default mode was acceptable, through not as vibrant as the output from the HP model. In draft mode, images were washed out and lacked depth.
Epson ET-2700 Color Print Samples (Default, left, and Draft, right)

Color output produced by the ET-2700 in default mode was acceptable, though not as vibrant as the HP model. In draft mode, images were washed out and lacked depth.

Epson ET-2710 Color Print Samples (Default, left, and Draft, right)

Color output from the ET-2710 in default mode was acceptable, though not as vibrant as the output from the HP model. In draft mode, images were washed out and lacked depth.
Epson ET-6160 Color Print Samples (Default, left, and Draft, right)

Color output from the L6160 in default mode was acceptable, though not as vibrant as the output from the HP model. In draft mode, images were washed out and lacked depth.

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