brother
at your side

The Transformative Applications Afforded by Portable Printing

Executive Summary

Printing on the go is a benefit to many industries, especially within government, health, sales and inspection markets, although traditionally there have been many barriers. Printers are often bulky, fragile to handle and not suited to the rough and tumble of day-to-day transport. Traditional printers can be unreliable, operate optimally only in certain environments, and are constructed with highly complex and delicate parts. In addition, ink and toner consumables are often tricky to install, and can be messy and expensive for mobile use.

Brother's ultra-mobile PocketJet printer range, which relies upon thermal printing technology, tackles all of these problems head-on. Its functionality allows for the easy production of documents like contracts, notices, order forms, illustrations, quality control documents and labels in a wide variety of environmental conditions.

Introduction

Portable printers have been around for a while but are not deemed as reliable as your stand-alone printers. Inkjet printers require complex technology to operate and the ink itself is expensive, messy and can struggle to function properly in certain conditions (when it's too cold, for example).

Laser printers are far too large for easy transport and the toner cartridges don't lend themselves being agitated in a mobile environment - the indelible, dust-like, inky toner can get incredibly messy. Inevitably, the question arises as to which technology would best suit mobile applications? The answer undisputedly is thermal.

Thermal printers have fewer moving parts because the ink that forms the images and texts is part of the paper. All the printer needs to do is heat up the paper to imprint an image, which means the printer itself can be compact and therefore mobile. The lack of complex and moving parts also dramatically improves durability and power management, which means a thermal printer can operate for extensive periods of time just on battery power alone, and yet still be capable of fine text and graphics.

The ability to print on the move opens doors to new industries and effectively cuts down workflows in others.

Added to this is the printer's ease-of-use and its compatibility with some of the most popular software, devices and services that are readily available in the market. Along with the support network of a company like Brother, this translates to the delivery of a trust-worthy, industrial-standard device that is reliable and cost effective.

Setting Up and Securely Connecting

Brother's PocketJet series allows you to connect to it in a variety of ways via USB, Bluetooth and WiFi. If your workforce uses mobile devices, the easiest connection method is Bluetooth –download Brother's iPrint&Scan app, press the Bluetooth button on the printer, connect your phone or tablet and print the file. Bluetooth has a range of up to ten metres. Its direct connection requirement can be beneficial for security as it prevents more than one device pairing at the same time.

If, for whatever reason, Bluetooth is too limiting, then WiFi can be used as an alternative form of wireless connection. If more than one person is likely to use the printer at a time, it is best to obtain a WiFi enabled device which can either be connected to directly or added to a network for sharing purposes. The range is also increased dramatically, although this will depend on any structures and buildings around the devices. In terms of security, most current and mainstream connections are supported – from WEP, through TKIP, AES, WPA2-PSK and more.

On Android devices, the whole process of downloading the app and printing out a full page test image takes less than two minutes with a decent internet connection. On an Apple device, the process is even quicker because no app is required thanks to Apple's AirPrint compatibility.

If a personal computer is being operated, then a simple USB cable connection can be used (or one of the wireless methods above).

In addition, all Brother PocketJet printers support USB for connections. This option can be more reliable than wireless connections (in instances of high radio interference) and is potentially even more secure, as the access to the device is a physical connection rather than a wireless one.

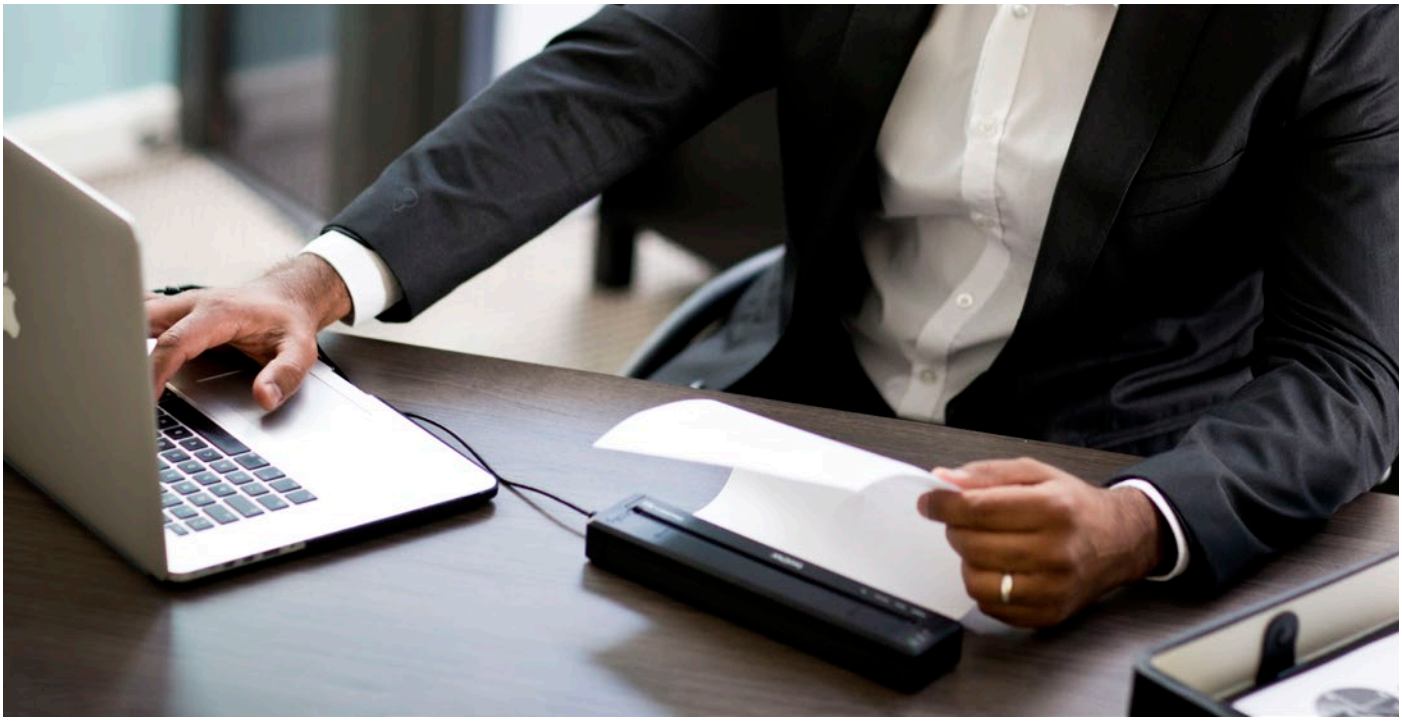
Compatibility with Apple Devices

Research shows that of businesses using mobile devices more than two-thirds use Apple devices - it is worth noting that Brother offers a special PocketJet variant which is MFi certified. MFi is a term that originally meant "Made For iPod" and is Apple's own certification. Nowadays it's more commonly used to refer to any of Apple's own i-devices: particularly the iPhone and iPad which make up significant parts of the world's phone and tablet market.

The MFi-certified variant does not just offer direct Bluetooth connection to Apple's iOS devices, it consumes significantly less power than standard WiFi connections and, as such, provides a noticeable enhancement to battery life when used.

This also includes a Software Development Kit (SDK) which enables businesses to develop their own apps to use with Brother's PocketJet devices. This means almost any printing-related requirements can be successfully accomplished.

Finally, it should be noted WiFi-enabled PocketJet printers are Apple AirPrint enabled thus easily operates within such an environment.



Gartner Hype Cycle for Imaging and Print Services 2015: https://www.gartner.com/doc/3093219/hype-cycle-imaging-print-services

Thermal Printing Technical Description

Current mainstream print technologies used in a standard office environment are inkjet and laser printers.

Inkjet printers project ink onto a page using complex, mobile print nozzles and an ink tank. The ink then requires drying time to set onto the page. The benefits here are very high-quality image production but this comes at a cost in terms of capital expenditure, consumable costs, complexity, bulk and reliability. On the other hand, laser printers use laser beams to 'draw' electro-static images on to special drums that then attract toner to those areas. The drum is then rolled onto the paper to create the image. The benefits of laser printers are that they can be cost-effectively run and they produce sharp-looking text and graphics. However, they can be bulky and the toner packs are fragile to handle.

Thermal printers on the other hand, don't require separate ink as the technology for 'printing' the image is embedded into the paper. Most people will be familiar with thermal printers when they are given a receipt – 70% of all thermal printing paper sold is used for receipts. People would be forgiven for worrying that all thermal printing paper used is thin and low-quality, but in fact various types of thermal printing paper are available and compatible with Brother's PocketJet series.

At a basic level, thermal printing paper consists of a substrate layer of basic paper with a chemical coating layer on top which contains dye (mixed with a developer). When heat is applied by the printer, the molecules in the dye bond with the molecules in the developer to produce an image (there's no ink or toner being moved around). Consequently, most thermal paper is black and white only.

There is naturally a different feel and appearance to each side of the paper but if a user is still confused they can rub a fingernail on each side (to generate friction) and see which side gets marked.

Of course many documents need to be more robust than a thin, receipt-like print-out and a variety of weights of paper can be used - including special archival paper which lasts for up to 20 years. This paper has a separate, protective layer above the reactive layer which protects from high-temperature and moisture.

Otherwise, the thermal printer will operate in extreme environments from -100C to 500C including high humidity.

More information on the properties of thermal paper can be accessed from this white paper.

Thermal Printing Usage Scenarios

There are three main usage scenarios for thermal printing paper:-

Point Of Sale receipts:

These require low cost dye coatings which can fade rapidly as archival concerns are minimal.

Faxes:

A great deal of fax paper is thermal which can put people off as it's usually low-grade and thin. However, high-quality paper is rarely used by faxes.

Transaction documents:

These documents require higher-quality archival paper whether it's for professional-levels of presentation, durability or archivability. These are the most important documents and include contracts, warranties, invoices, inspection forms and citations.

It's the latter documents that require high-quality printers like Brother's PocketJets as printing in the field can often lead to increased productivity, saving considerable time compared to returning to the office and doing paperwork. Here it's worth highlighting the point that Brother's PocketJet printers can print up to 600 pages on a single charge. Additional batteries are available as are optional mobile chargers.

For many workers however, the simple ability to print an important document on demand – without worrying about running out of power or ink (especially in awkward or urgent situations), will be the biggest benefit of all.

SMB, Enterprise and Vertical Examples

Vehicle-based Workers:

Brother's PocketJet printers are small enough to be dashboard mounted. Brother also provides optional car charger accessories which can either be permanently wired into a car or make use of the cigarette lighter.

If a tradesman, whether it be a plumber or pest control specialist, needs to print out a quote or a document of official certification, this can be done on the spot with no convoluted workflows involving additional contact or document postage (with associated confirmation of delivery).

Local Government:

The ability for local government workers to print documents while on the road and removing the need to perform administrative functions back at the office is a major cost and time saver. These documents can have significant legal ramifications – especially for site visits and inspections – so leaving a high-quality, durable document at the scene without doing the paperwork back at the office saves time, money and offers a greater level of security.

Thanks to the small size of the printers they can be carried in bags and even pockets. The lack of complex machinery inside and the lack of moving parts inherent in the thermal printing technology, means that even the most careless worker will struggle to damage the machine.

If that's not enough, ruggedised cases are also available for each Brother PocketJet model.

For the likes of emergency services, inspectors, public safety officers and healthcare professionals - all of whom are required to create documentation throughout the course of the day to varying degrees – hassle-free printing on the spot is a key requirement.

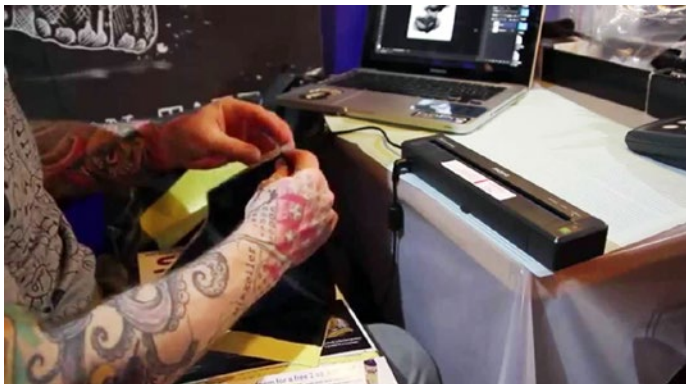
Illustrators and Tattoo Artists:

This interesting market has embraced thermal printing technology, as it works to be an extension of their trade skills. For tattoo artists, they can tackle on-the-spot requests from customers, simply add an app to the customer's phone and from this point an accurate stencil of the desired image can easily be produced. This ensures the highest quality stencil and reduces creative production significantly.

Studios can be compact environments and not suited to large computers being left onsite.

The ability to rely on a mobile device with small, easily-stowable features makes the Brother PocketJet advantageous to the business operability.

The same goes for illustrators with the many touch-screen devices on the market and apps which allow sketching and drawing, from animations to architectural plans. Brother PocketJet printers' ability to produce a hard copy, whether in an office, café or even pub, is transformative for the creative industries.



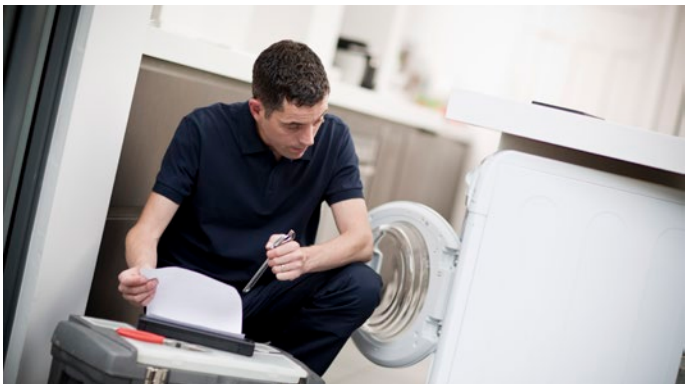
Field Sales:

Perhaps the most obvious application for high-quality, mobile document printing is in field sales. On these occasions high-value contracts, invoices, quotes and financial plans will need to be produced on high-quality durable paper suitable for archival storage. The ability to print out a high-quality, fully-customised document on a professional letterhead for salesmen, mortgage brokers and the like speaks for itself.

But more than that, the ability for the salesperson to close a deal on the spot without relying on the office to provide paperwork and chase things up at a later date is invaluable.

Field Service:

The ability for Field Service workers – people who have to inspect remote installations, buildings and other entities – is almost self-evident. This could include a gas man checking on a home supply, a structural engineer evaluating the integrity of a building or countless other scenarios. In each case formal and legally-binding certification needs to be produced and doing so on the spot without follow-up visits, contacts, document postage and receipt chasing will again prove invaluable. They can also print out order forms for new parts instantly if required.



Manufacturing:

On the factory floor or loading areas, mislabelled items or items that have been labelled illegibly thanks to a rushed, hand-written note, can be a major problem. Ease-of-use and practicality are major factors, otherwise workers will not use the product. However, the simplicity of using Brother's PocketJet printers means that professional-looking documents can quickly and easily be produced instead of items that might traditionally have resembled a hand-written scrawl. As such, labels, quality control certificates and documents detailing items required for various types of inspection can be produced on the spot, without workers and inspectors experiencing too much inconvenience.

Brother's PocketJet Range

Brother's PocketJet range features six different models which offer combinations of different levels of print quality and varying connectivity types. The price varies accordingly:

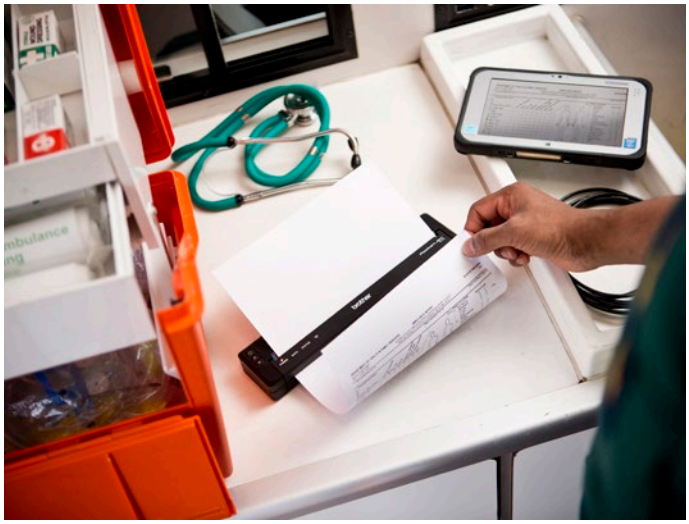
At the lower end are the 200dpi models with a simple wired connection costing less than models with wireless connectivity. After that, the range moves up to 300dpi and offers combinations of wired, Bluetooth and WiFi connectivity at higher prices. There's also an MFi-certified variant (Made For Apple's i-devices – the iPod, iPad and iPhone) which connects directly to Apple products and offers power-saving benefits.

The range is as follows:

- $599 RRP - PJ-722 Bundle Pack - USB 2 interface - 200dpi print resolution
- $699 RRP - PJ-762 Bundle Pack – Bluetooth and USB 2 interfaces - 200dpi print resolution
- $699 RRP - PJ-723 Bundle Pack - USB 2 interface - 300dpi print resolution
- $799 RRP - PJ-763 Bundle Pack – Bluetooth and USB 2 interfaces - 300dpi print resolution
- $879 RRP - PJ-763MFi Bundle Pack – Apple iOS Bluetooth (MFi certified) and USB 2 interfaces - 300dpi print resolution
- $879 RRP - PJ-773 Bundle Pack - Wi-Fi and USB 2.0 Interfaces – Apple AirPrint, Google Cloud Print, Mopria compatible - 300dpi print resolution

PJ bundle packs include the device with rechargeable Li-ion Battery, AC adapter and A4 thermal paper.

All units are compatible with the following Operating Systems: Windows Vista/7/8/8.1/10; Windows Server 2008/2008 R2; Windows Server 2012/2012 R2; Mac OS X v10.8/10.9/10.10 /10.11; Linux Red Hat and Debian.



Optional Extras

There are various optional extras to support Brother's PocketJet range which include ruggedised cases, paper-roll feeders and chargers.

The full list follows:

- Replacement Li-Ion battery (600 page charge)
- Rugged Roll Printer Case (IP54 1.2m drop protection)
- Rubber printer case (1.2m drop protection)
- Paper Roll Guide (PJ-722/723 only)
- AC Adaptor
- Car Adaptor (Cigarette socket type)
- Car Adaptor (Wired type)
- Car Mount
- Carrying Case
- Paper Roll Holder
- Paper Roll Printer Case

Brother, Support and Sustainability

While Brother is not alone in this industry, it is however, the longest standing and largest global brand with the widest support network. Brother's PocketJet printers require minimal support in the first place owing to the lack of moving parts, zero requirement for ink or toner refills and the near-impossibility of a paper jam owing to the lack of housing for the paper feed.

In addition to this, the PocketJet range support a range of apps, like Brother's iPrint&Scan, which are unassumingly straightforward to run. They can easily be downloaded on location with mobile internet, the installation is automatic, and even with the wireless-based models, the device scans and finds the printer with minimal human interaction. After that, the large, touch-screen-optimised buttons are effortless to use, even for those who are not tech-savvy.

Yet nothing is foolproof. So while the requirement for support is dramatically reduced with PocketJet, it's reassuring to know that Brother's strong and reliable support network is available should something business critical occur.

Brother has been operating for over 100 years and has 17 production sites and 52 sales sites spread across 44 countries. Here in Australia, there are specialised sales people and service agents located around the country as well as a Sydney-based technical phone support team available Monday to Friday 8.30am to 5pm.

Businesses can also leverage Brother's "Brother Earth" program which defines its Green credentials and attitudes towards sustainability.

Conclusion

There are few existing products that can match the size, portability, durability, versatility, accuracy and support of Brother's PocketJet range. The devices embody simplicity with few moving parts and no requirement for expensive, unreliable and messy consumables.

Never has the ability to produce a high-quality printout, whether it's an on-the-spot sketch, diagram or text-based legal note, been made easier away from the office.

The small size and robustness of the PocketJet means it can literally be transported in a bag or pocket, and the high-quality battery will reliably print out for days away from the charger if required.

Connection via wired or wireless means it is simple to use as is the iPrint&Scan app that makes everything work. SDK's mean that unique and tailored applications can be created for any print-related business purpose.

This means that remote workers can produce contracts, citations, legible quality control documents and a whole lot more on the spot without having to worry about 'going back to the office,' distributing paperwork and chasing receipts.

The variety in the PocketJet range means that there's a device to suit every work requirement – whether it's via wired connection, Bluetooth or WiFi. Plus, the optional extras mean ruggedisation or mobile charging facilities are also available.

For more information on Brother's PocketJet range, contact the Brother Commercial Division on:

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