

multifunction product buyer's guide



Top 10 issues, services and solutions characteristics to consider in assessing and choosing MFPs

1. Clearly define your requirements.

Understand what you intend the MFP to do for your end users and how adding MFPs to your mix will support business applications and provide value-add capabilities. Beyond printing and copying how do you want to use the MFP to help manage documents, reduce paper, simplify workflow, manage forms etc?

- How many copy, print, scan, fax and email jobs will the device be asked to run each day? Are there peak usage periods when jobs might conflict with one another?
- How many users will each device support?
- What is the total monthly volume of output? If there are peak usage periods, how much is printed then?
- Is there sufficiently broad range of printing, and scanning speeds and features from the MFP vendor to meet different workgroup needs?
- Do you need robust document finishing options from the desktop?
- Do you need to offer, as well as control, both black-and-white and color printing?
- Do you need a range of workflow and routing solutions (scan to email, desktop, remote location, repositories)?
- Is the MFP configurable to meet different needs? Is it upgradeable to add new or improved functionality?
- Can users or administrators also add metadata to any scanned document, making it ready for quick search and retrieval?
- Are solutions available for specialized accounting applications (e.g., activity by user, for all functions)?
- Does the scanning solution also include optional OCR software with advanced desktop layout analysis for editing, archiving and sharing?
- Do you need to combine and route documents in a variety of file formats and does the vendor support this solution?
- Do you have specialized forms and can the vendor support scanning, data capture, and routing of these forms?
- Do you need full database integration support (e.g., Microsoft® and Unix®/Linux® environments)?
- Are you looking for simple collaboration tools to better share documents, using common repositories?
- Do you need to integrate document content with common search engines?
- Can the vendor provide the ability to extend a point solution to larger workgroups or to the enterprises?

2. Total Cost of Ownership and MFP cost/value benefits

MFPs are useful assets to help manage and control costs for printing and imaging, and also add new capabilities to your organization. Consider how MFPs can address total cost of ownership for printing and imaging assets, better consolidation and management of resources across the organization, and improve business process efficiency.

- Does the vendor provide fact-based tools and methods to help you assess current TCO and estimate return on investments?
- Is there a common, modular architecture across the product family?
- Do different product models perform the same functions the same way across the product family?
- How well does it reduce time and resources for document production and distribution?
- Is the architecture designed from the ground up for serviceability, modularity, functionality and ease of network administration?
- Is the product priced competitively with comparable stand-alone devices?
- How well does it enable asset consolidation with performance equal or superior to its single functions equivalent?
- Are supply costs competitive?
- How much space savings does it provide through compact design?
- Does it allow you to have only one maintenance contract?
- Does the vendor provide consultative services if needed?
- Is it upgradeable — providing the option of upgrading one model to another, or adding new features and functions, without incurring the expense of replacing the old with the new model to get new features or functionality?



3. Third party evaluations and real use situations.

Evaluate the data on spec sheets and compare actual performance, and management and support issues using reports from independent testing agencies. Be sure to also test and validate performance with your own applications and network environment.

- How efficient is network printing of basic jobs vs. rated engine speed?
- Are there independent test reports that support performance claims? Has the common controller for the product family been recognized for superior performance by third party evaluators?
- Does it significantly change the work process or is it simply a higher-speed engine?
- Does the device optimize scanning file compressions to reduce network traffic?

4. Seamless network integration

Consider how easy the system is to plug into an existing network, and whether it is easy to deploy and will provide immediate benefits with little start-up training.

- Does the vendor provide web based software that configures, manages, monitors and reports on printing devices throughout the enterprise?
- Are wizards provided for critical processes including installation, troubleshooting, upgrading, cloning, to free up your more experience technical staff?
- Are the print drivers for all devices provided and installed from a common CD with always the most current drivers downloadable from the web?
- Does the system provide an open architecture for integration with a wide variety of document management systems?
- Will it play well with current desktop applications, standards, and document repositories in place?
- Does the scanner emit industry standard file formats, such as PDF (including searchable PDF), TIFF, and JPEG?
- Does the system support common network user authorization, authentication schemes and common directory protocols, such as LDAP?

5. Ease of Use

Ease of use for end users means less calls to the help desk, and fewer IT resources for training and problem management. Usability should be paramount, and without compromise.

- Are the product user interfaces intuitive?
- Does the family of products offer a common UI?
- Are the software application user interfaces intuitive?
- How much training is required for a user to become functional?
- Are online help and documentation available and easy to use?
- Does the product work the same way whether you're copying, printing, scanning or faxing?
- Does the product work the same way from the desktop as from the walkup console?
- Does the product work the same way across a product family with members in different speed bands?
- Does the vendor provide custom print drivers (same look) for both PCL® and PostScript®?
- Is context-sensitive help accessible directly from the device's walk-up user interface?

6. Multitasking

Take a close look at the system's ability to truly multifunction efficiently and concurrently for each of the services (print, copy, scan, fax) and assess real performance and productivity in actual use situations.

- Can users access the function they need at any time, even if other functions are already in use?
- Does the solution provide benchmark performance for all individual functions and services, and allow them to work concurrently without performance degradation?
- Does the product have an embedded server (vs. basic network interface)?
- Does the product let you copy, print and get machine status from the Web?
- Does the product have the ability to support multiple protocol stacks?



7. Bi-directional Communications

A failure to communicate timely and accurate information to users and IT administrators on the status of jobs, queues, and devices will result in more intervention by IT staff to solve, prevent or anticipate problems. Solid bi-directional communications both at the device, and across the network is essential.

- Does it provide job and device status from the desktop?
- Does the product provide viewing of all job queues (print, scan, e-mail, copy, and fax) at the device?
- Does it provide alerts to dispatch staff when problems occur?
- Does it provide sufficient information, tools, and controls to anticipate problems, reduce machine downtime, minimize user frustration, and reduce calls to the IT Help Desk?

8. Device Management, Remote intelligence, and Support

Consider carefully the vendor's commitment to provide robust device and fleet management tools and utilities. And, look for device relationship management software and intelligent monitoring that optimizes the device's availability and uptime.

- Can you easily integrate the MFP with your existing network and print management tools?
- Does the vendor provide a set of robust Web management tools and reporting systems?
- Does the vendor provide usage reporting or analytical tools?
- Do the vendor's device management tools provide robust support for competitive equipment, as well as their own?
- Does the system provide remote diagnostics and remote service and ordering of required parts and supplies before they fail?
- Does the vendor offer a comprehensive portfolio of value-added optional services?
- Does the vendor provide superior response time?
- Does the vendor provide global service, analysts, and training support?
- Does the vendor provide consistent quality of service?
- Does the vendor provide escalation access to manufacturers product development teams?

9. Security

Assess vendor commitment and approach to security, participation and compliance with emerging government security standards, and third-party testing and certification. Security should be embedded as a core component of the MFP and not addressed as a backend network kit.

- Does the platform offer built in security features for physical and network access controls, user authentication, file encryption, and file deletion to fully comply with your organization's information security policies?
- Is the device certified according to the NSA/NIAF common criteria standard? What is the vendor's commitment to this standard?

10. Applications integration and software

Evaluate additional document workflow software available directly from the vendor, as well as the vendor's partner solution portfolio. Understand how additional software and solutions will be acquired, deployed, tested, and supported in your organization.

- Does the vendor have a robust partners program for custom solutions?
- Are their published SDKs and API's readily available for custom applications development?
- Are the vendor's partner solutions tested and certified that they perform as advertised?
- Does the vendor provide a single point of contact, and provide first, second, and third level support as needed to eliminate frustration determining the source of a problem?



Detailed Selection Criteria for IT Professionals

As the need for color output, scanning, asset management, security and content management continue to drive IT technology decisions, the need to add multifunction devices to the enterprise escalates. The following topics and questions are designed to help IT professionals execute an informed strategy for adding MFPs to their network.

Basic Design Architecture

(Modularity, Upgradeable, Add-On Options)

- Does the product's design ensure that the maximum number of paper trays are fully adjustable by the customer, up to 11" x 17" (excluding the high-capacity feeder)?
- Do the paper trays automatically detect paper size or confirm paper stock? Is information provided in the local user interface, print driver and product settings, allowing customers to program jobs at the device or in the print driver based on the attribute required?

This is an important design feature, aimed at increasing user productivity and reducing potential print/copy errors and unnecessary paper jams.

- Is the maximum monthly print volume (i.e., duty cycle) greater than 300,000 pages? Can the product run this volume reliably?

Duty cycle is the manufacturer's measurement of maximum volumes that can be run based on a number of factors, including engine design, performance reliability, etc. It is not intended to represent the recommended monthly print volumes.

- Can the product handle heavyweight papers, e.g., up to 110 lb./200gsm?
- Can the product duplex print/copy onto 110lb index (200gsm) stock?
- How has the product been designed to accommodate jams? Is the paper path short and efficient? How many touch points are there? How many jam access reach areas are there?

Touch points are any lever or pull knob the user must actuate to clear a jam. The number of touch points is one determiner in the user's success in clearing a jam — the fewer, the better as an indicator of paper path design. An access reach area is where a user must reach inside the machine to pull out a jammed sheet. Again, the fewer, the better.

- Does the product have context-sensitive help screen supported by text and icons to help users effectively and quickly resolve their inquiries?

- Is there a high-speed, embedded print controller, with a high-speed processor?

A high-speed processor positively impacts the system's ability to RIP and print even the most complex documents, decreasing job completion time.

- Is the device designed with most parts that are likely to fail contained within customer-replaceable modules? Does the device independently track usage of each module and notify the user to replace it **before** it is likely to fail? Can the device automatically re-order these modules from the vendor as needed?

Device Relationship Management software should exist to optimize product uptime and user productivity.

- Is network job-based accounting available for all supported functions (copy, print, fax, network scanning and email)? How easily can this feature integrate with customer's existing accounting programs?
- Are there solutions for tracking and setting usage limits of copies, prints, scans, fax sends and fax receives by user and by job?

An embedded auditron is important for those who want the ability to track and limit usage by user, by function and by color or black & white output. A system administrator should be able to designate users, groups and general accounts and the system should allow for the generation of a CSV file.

- Does the product allow for offline stapling, that is restapling of a document immediately at the device?



Copier Attributes

- Does the product allow for virtually unlimited job program and scan-ahead capability, without performance degradation?
This feature improves workgroup productivity, allowing users to stage jobs in a queue.
- Does the product allow users to program in another job, regardless of the function or destination? Does it include a “Program Next Job” feature, decreasing users’ wait time?
- Can the user interrupt a job without compromise?
Some products will not allow a walkup user to program some features (e.g., staple) if they are in use during either a print or copy job. This means that the user must wait until the job is completed before programming and then running their job, resulting in lost productivity.
- Can the user create an electronic master and produce multiple sets of documents scanned from the platen, as well as the document feeder? Is this feature easy to use? Can the user mix simplex and duplex segments within the document? Does the product accommodate different image adjustment settings for different documents or settings?

- Can the user scan in documents by section, sample printing the last scanned section?
This feature is important if the user wants to sample the last scanned section of a larger document and determine its accuracy without affecting the integrity of the whole document.
- Does the product support application requirements often found with legal documents? Does it have a user-selectable head-to-head/head-to-toe option for 8.5" x 14" documents?
- Can the user manage jobs at the device — cancel, promote, release copy and/or print? Can the systems administrator program the “cancel” feature, making it available to a select group of users?
- Does the product offer Bates stamping and page numbering on copy output, with flexibility in numbering and location options?
- Can users add annotations automatically, e.g., data, page numbering, comments, dates, etc.?



Printer/Print Driver

- Is the MFP capable of receiving incoming print, fax, scan and copy jobs while RIPing other print jobs, and while printing a current job — all concurrently or simultaneously? Can it move effortlessly between functions even when there is an error?

It is important for the product to pull jobs off the network print server onto its own hard disk, relieving the network of large print files and run that could bog down the server.

- Is the system designed to keep the paper path full whether or not the jobs include banner or separator sheets, finishing or other features?

Advertised speed is not a true indication of printer performance. Some manufacturer's systems do not optimize performance and can have significant pauses between jobs, lowering overall efficiency.

- Can the MFP hold a job for missing resources, while printing other jobs in the queue? If a job is set to print and the selected paper, e.g., 8.5" x 14", is not available, will the device hold the job for resources without deleting it and advance other jobs in the queue? Will the device advance to the next job if there is a supply issue, e.g., if there aren't any staples?

- Can the MFP print multiple sets with little or no time delay between sets, increasing overall machine throughput speed — create once, transmit once, RIP once and print many?

Some printers will actually send five sets of a 10-page document as 50 pages when the application software print driver is set to collate and the device print driver is set to collate. The printer will behave as a page printer, increasing the load on the network and print server. If staple is selected, the entire 50 pages will be stapled together as one set.

- Does the MFP have a bi-directional print driver that provides timely status and feedback to the user about the device, about jobs submitted, and on the jobs in the print queue? Will it automatically configure the driver to the specific device configuration? Does it provide information about the status of supplies and the device settings?
- Is there a "Secure Print" feature, allowing users to password-protect sensitive or confidential documents on the device's hard drive for printing at their leisure?
- Are the PostScript Interpreter and drivers standard, rather than a chargeable option?
- Do stapling and non-stapling jobs have the same productivity performance for print and copy jobs?
- Do the vendor's print drivers offer a common user interface and look for both PCL and PostScript? This save potential training expense and reduces user confusion.

- Are the print drivers WHQL-certified and based on the Microsoft printer platform, using the Microsoft Driver Developer Kit? Are the drivers standard with the Microsoft operating system software?
- Is the standard base printer memory at least 128MB, with room for optional memory?
EES memory enables the printer to output multiple large and/or complex jobs at or near its rated engine speed.
- Is there a "delayed print" feature, enabling users to schedule jobs for off-peak usage periods?
- Is the device capable of print quality at 600 x 600 dpi or higher?
- Can users program paper tray attributes to match the paper type that is loaded in the tray (e.g., custom paper types) so that the tray will automatically be selected based on the paper type specified?
- Does the MFP give users the choice to have a banner sheet, for quick identification of job owner? Can users specify that the banner sheets are printed on color paper for easier job separation and identification?
This feature minimizes users inadvertently walking off with someone else's print job, causing waste and delays.
- Can the device produce professional-looking front and back covers?
- Does the print driver provide page level programming?
This feature is important for users who wish to be able to program settings on a page level and print the job, minimizing post-processing assembly or finishing. For example, covers, tabs/inserts, simplex sections or duplex sections (and/or individual pages), or special paper stock / color. A bi-directional print driver communicates with the device letting users know what paper stock is available, and a summary feature allows users to view the programming so they can selectively edit, delete and re-program the job.
- Can users restore "all" print driver settings and "individual" tab option settings to the printer driver defaults, with one command?
- Does the MFP allow edge-to-edge printing, so that users can print without margins?
- Can the MFP print files in native format, e.g., TIFF, PDF, ASCII, TEXT? Can it print one or multiple PDF or TIFF files without opening them in an application?
- Can users send print jobs to the device over the Internet, with access to features like stapling and duplexing?
- Does the MFP's print driver support LAN fax capabilities?
- Is there an available tool with which any user can batch together multiple print-ready files (e.g. PS, PCL, PDF, TIFF) and submit them to the device in a single step?

Print/Copy Job Management

- Can users view the entire integrated job queue (print, copy, scan, fax) at the device to determine if their jobs are complete or still pending? Is this all viewable on one scrollable screen? Can users view job status remotely, from their desktops? Can users cancel their pending jobs from their desktops?
- Can users cancel, promote or release jobs at the device, without having to rely on an administrator with restricted access to the printer server console?

- Does the copy/print click price (cost per page billing plans) remain the same, regardless of the page size printed or toner coverage on the page? Are costs predictable and controllable?
- Do the color devices offer two click charges; one for color content pages and one for black & white pages? Will the device charge the color page rate only for the pages with color content (and not for pages with black-only content) within the same document?



>CONNECTING...

Network Scanning/Email

- Does the device have destination routing templates, allowing users to automate repetitive scanning of jobs with pre-defined attributes? Does the user have the flexibility to change the file format at the device? Can the user modify the distribution of the pre-defined workflow? Destination routing workflow templates are highly useful in offices with established, repetitive processes. They contain specific instructions that define the scanned document's format (PDF, TIFF, JPG) and details about distribution including; file, e-mail, remote printer, EDMS or ECM, desktop.
- Does the device notify users of job completion, whether successful or not?
- Can users scan documents to a folder or network server?
- Can users scan documents to their PC for immediate viewing and/or repurposing?
- Can the MFP create text-searchable PDF files, providing greater access to documents archived in shared file folders or EDMS applications?
- Does the MFP support application software that enables one-click assembly of different documents (e.g., MS Word, PDF, Excel) into one, unified PDF document?
- Can the MFP scan images into WYSIWIG web-based HTML files, improving immediate access to documents posted on any website?
- Does the scanning software have the highest word accuracy in its class?

- Can users scan documents to individual or multiple email addresses? Is it easy for an inexperienced user to scan to email successfully in seconds?
This feature offers a fast, high-quality and less expensive alternative to faxing.
- Can users look up email addresses from a company directory via LDAP at the walk-up user interface? Can users access email addresses from a public directory?
- Can access to the device be restricted via network authentication? Are the processes the same as those required by the users' network login, e.g., user name and password? Can a user's name be added to the "From" field for further verification of the sender?
- Does the MFP allow encryption to control document permissions?
- Does the MFP allow for seamless scanning to Electronic Document Management Systems (EDMS) or Enterprise Content Management (ECM)?
- Are the vendor's partner solutions tested and certified that they perform as advertised? Does the vendor provide a single point of contact, and provide first, second, and third level support to eliminate frustration determining the source of a problem?
- Can users choose a scan file format at the device based on application and preference?
- Does the MFP allow user to attach Document Management Fields (e.g., date, name, file number) to the document file for filing/retrieval and unique identification (sometimes called metadata)?
- Can meta or indexing data be automatically included in the scanning template workflow?

Fax Attributes

- Does the device integrate with a network fax server?
- Does the MFP's print driver support LAN fax capabilities?
- Does the device support walkup fax services, from both the feeder and the platen, up to 11" x 17" documents, single-sided and duplex originals?
- Does the device support dual lines, enabling concurrent sending and receiving, and sending or receiving two documents?
- Does the MFP support Internet faxing, allowing users to scan a document and transmit it to an email address across a network?
- Is there a method of byte-by-byte control of incoming fax jobs, which is considered the safest by some of the most security-conscious customers? This means that someone trying to "take control" of a device via the phone line will be thwarted. If it does not follow fax transmission standards exactly, CCITT (ITU), the connection is closed.

Concurrency

- Can users scan-ahead copy, fax, email or network-scan jobs while the device is printing or sending/receiving a fax?
- Is there a "Job Interrupt" feature, with access to all features, and "Automatic Resume" after timeout?

**Security**

- Is there device access password protection to safeguard information?
- Is there NIAP/Common Criteria certification?
National Information Assurance Partnership (NIAP) is a U.S. Government initiative to meet the security testing of Common Criteria and is a collaboration between the National Institute of Standards and Technology (NIST) and the National Security Agency (NSA). Common Criteria for IT Security Evaluation is an internationally recognized methodology (International Standards Organization standard, ISO 15408) for evaluating the security claims of information systems, hardware, and software vendors. The five major elements of Common Criteria are; availability, integrity, confidentiality, accountability, and non-repudiation.
- Can users secure networked devices by enabling/disabling specific devices and ports?
- Is there a service diagnostic port restriction?
It is important that no unauthorized access to image data can be gained via device service diagnostic port. There should be no connection to where the data exists on the system and the service port.
- Is there a "Secure Print" feature, preventing unauthorized viewing or removal of important or confidential documents that have been sent to the printer?
- Can users apply 128-bit encryption to control the permissions of a PDF document?
- Does the Image Overwrite Security process use the 3-pass algorithm specified in the U.S. Department of Defense Directive 5200.28-M? Can it be set up to electronically erase immediately after every job or on demand at the customers' convenience?
- Do the vendor's products offer Authentication and Verification prior to accessing network scanning, email, and fax functions? This process is the same as network logon; user name (ID) and password.
- Does the product employ a method of byte-by-byte control of incoming fax jobs, considered the safest by some of the most security-conscious customers? This means that someone trying to "take control" of a device via the phone line will be thwarted. If it does not follow fax transmission standards exactly, the connection is closed.
- Does the product ensure there is no possible way in which unauthorized users can gain access to other functions of the device or to the customer's network? In addition, can faxes be automatically routed to a password-protected mailbox or stored at the device until an authorized user releases them for printing?

Section 508

- Does the vendor provide support to make the MFP “Section 508” compliant? Does the vendor publish this assurance with all eligible products they market?

Support and Guarantees

- Is the product enabled with remote diagnostic software, thus enabling remote service and required parts determination?
- Is the product backed by manufacturer-provided service and support coverage? Is it global?

**Device Administration and System Administrator Tools**

- Is there an easy-to-use embedded web page that assists the systems administrator with:
 - Verifying physical and network connectivity?
 - Setting up network connectivity and other options?
 - Viewing job status?
 - Submitting jobs?
- Does the vendor provide utilities to work on TCP/IP and IPX networks? Do they provide tools the systems administrator can use to discover, set up and troubleshoot the configuration from a remote location? Are there multiple ways to set up and configure a network of devices, e.g., web pages, Internet services, local touch screens? Are the menus easy to read and navigate?
- Does the vendor provide support for Tivoli® NetWare and Tivoli NetView? Can all the devices be seen under one SmartSet in NetView? Is the vendor fully integrated with NetView Event Browser and Tivoli Enterprise Console (TEC)?
- Does the vendor software support Unicenter TNG Snap-In, allowing full integration with event management, problem management and Help Desk features?
- Does the vendor's device management software support HP® OpenView®, allowing users the ability to view the status of discovered devices with an easy-to-use mapping tool? Can Internet services for device management launch directly from OpenView? Are there means to provide traps for and messages to OpenView's alarm browser?
- Is there a Microsoft management console Snap-In to provide actual device printer management behavior for printer discovery, faultless installation, and group management of multiple vendor devices?
- Does the vendor support the Novell® Distributed Print Server/Novell Enterprise Print Server (NDPS/NEPS) Gateway?
- Does the vendor support the ability to use a variable port for TCP/IP raw printing?
- Are there web-based and desktop applications that provide enterprise printer management with a proactive, single-view topology map to manage multiple vendors' printers, and view printers by attribute; model; or other administrator-defined group. Can systems administrators find their printers remotely, connect to their configuration tools, and be automatically alerted to error conditions and many more features?
- Does the vendor support LPR/LPD?

Industry Compliance

- Are the vendor's MFP products tested and certified for compliance with IEEE 802.11b wireless standards?
- Is there built-in process intelligence that allows the automated printing of barcodes on any appropriately configured PostScript printer on the SAP R/3 4.x (or higher) network? Are there utilities that enable automated checksum calculation, placement or start/stop characters, encoding of data string, and data compression?
- Can applications that use SNMP, such as HP Web Jetadmin, obtain information from the device (e.g., paper jam, out of paper, etc.)?
- What administrative service programs are available to simplify enterprise-wide printer installations and relocations for Microsoft Windows 2000 environments? Is there a utility that discovers devices, automatically installs devices, enables sharing printers to users and provides install reports all through a user-friendly interface?
- Do print submission tools support PostScript 3 with full features and PCL submissions tools? Do they allow printing of UNIX files?
- Are the print drivers WHQL-certified, based on Microsoft's Driver Developers Kit and are they part of the Microsoft's Office software print drivers?
- Does the vendor support compatibility with Administration protocols?
- Does the product accept print jobs from the DAZEL output server via raw socket printing Port 9100? Does the vendor support device and job monitoring by the DAZEL server?
- Is the MFP compatible with the Windows Internet Naming Service?
- Is the product compatible with administration tools for the Windows Network Operating System?



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