

WHITE PAPER

ROI Focus Shifts to Imaging and Output Infrastructure

Sponsored by: HP

Angèle Boyd
January 2004

EXECUTIVE SUMMARY

Enterprises spend much time studying, optimizing, and managing many elements of their IT infrastructure — network bandwidth, applications, storage, servers — but pay little attention to their imaging, printing, and document distribution environment. This state evolved primarily because P/L responsibility for the various costs is so fragmented and because print, though vital, is considered a lesser priority. After years of inattention and lack of management, the imaging and output infrastructure in most enterprises is fraught with unnecessarily high costs. This white paper details those costs and presents the significant opportunities to achieve cost savings, boost employee productivity, and derive workflow benefits from tighter integration between the document advances of hardcopy devices and business process software workflows. IDC studied seven midsize and large organizations to assess the impact of a managed environment and found significant benefits in terms of cost savings and improved user productivity when steps were implemented to optimize their imaging and output infrastructure. These benefits included the following:

- ☒ Average cost savings of 23% (The range was 13–40%, depending on the implementation scope.)
- ☒ Significant indirect or soft cost savings that were often cited as the greatest benefits (Specifically cited were various employee productivity benefits due to improved device uptime and workflow improvements.)

METHODOLOGY

IDC conducted in-depth interviews with seven midsize and large organizations (500+ employees) in the United States, all of which are HP customers. The list of companies was provided to IDC by HP. The interviews covered the companies' imaging and output challenges and the cost savings and benefits achieved by implementing a managed imaging and output infrastructure.

IMAGING AND OUTPUT INFRASTRUCTURE IN TODAY'S ENTERPRISE

Significant Costs from Failure to Manage

Most enterprises have no idea of what they are spending on their imaging and output environment. The costs are significant and so are the missed savings opportunities. According to IDC research, among organizations with 1,000+ employees:

- ☒ Most do not know how many hardcopy devices are in their enterprises.
- ☒ Less than half (48%) routinely track hardcopy costs companywide.
- ☒ Less than a third (31%) track IT help desk and support costs related to hardcopy.
- ☒ Most do not use Web and network tools to troubleshoot devices remotely.
- ☒ Few have assessed their imaging and output infrastructure with the goal of optimizing their hardcopy deployment.
- ☒ Few understand how to leverage document distribution, document management, and other technological advances in hardcopy devices to improve business process workflows and boost employee productivity.

Enterprises do not realize the magnitude of their spending on document production, distribution, storage, retrieval, and document/content repurposing, which IDC research suggests is 1–5% of revenues. IDC research shows that direct hardcopy costs alone (hardware, supplies, maintenance, IT support) are between 0.1% and 0.2% of revenues. Organizations are incurring excessive costs for extra footprints, supplies, maintenance, and help desk support because printers, copiers, and fax machines are not managed. The companies interviewed for this report looked to reduce these costs by optimizing elements of their imaging and output infrastructure and were able to achieve cost savings of 13% to 40%.

- ☒ A \$250 million company spending \$250,000 per year on hardcopy could save \$32,500 to \$100,000 per year. Over five years, it would save \$162,500 to \$500,000.
- ☒ A site with 1,000+ employees pays \$213 per employee per year in direct hardcopy costs (toner/ink and maintenance) alone.
- ☒ Failure to optimize network infrastructure and management for hardcopy traffic is costing companies in terms of employee productivity and help desk calls. Twenty-three percent of IT help desk calls are print related.
- ☒ Failure to digitize and streamline critical business processes costs organizations in employee productivity, labor costs, and missed/slowed revenue collection.

Fragmented Responsibility Is Driving Enterprise Costs in Imaging and Output

One major reason the costs are ignored is because there is very fragmented profit and loss responsibility for the various elements. Networked devices such as printers and scanners are typically maintained by IT organizations while standalone copiers and fax machines that may be located next to the networked devices are managed by a separate facilities organization. While IT has the responsibility to acquire, deploy, and maintain networked hardcopy devices, purchases of toner and paper supplies usually fall to user departments or the facilities manager. This fragmented management structure directly leads to inefficiency because no single department can ensure that hardcopy devices are optimally deployed in an organization. Table 1 demonstrates the direct, indirect, and soft costs.

TABLE 1**Fragmented Responsibility Drives Enterprise Imaging and Output Costs**

Costs	Responsibility
Direct	
Help desk	
Connected devices (printers, MFPs, and digital copiers)	IT
Unconnected devices (copiers, fax machines)	Facilities/operations
Hardware/supplies	
Hardcopy devices; ink/toner	IT, department managers, and facilities/operations
Storage (square feet and labor)	
Ink/toner/media; paper document archives	Facilities/operations
Records management	IT and department managers
Outsourced hardcopy jobs	Facilities/operations and department managers
Copy center and mail room	Facilities/operations
Fax	Telecommunications
Indirect and Soft	
Employee productivity	
Time lost due to device downtime	IT, department managers, and facilities/operations
Time to retrieve or recreate documents (paper or electronic)	Department managers
Unrealized revenue	
Lost documents preclude invoicing	Finance department
Opportunity costs	
Information not in right place at right time	Companywide

Source: IDC, 2004

Organizations Are Not Keeping Pace with Imaging and Printing Advances

In recent years there have been major changes in the technologies that enable printing, copying, faxing, scanning, and distributing documents, and companies have not taken advantages of these new technologies.

- ☒ Printing and scanning continue to increase while copying and faxing are decreasing, resulting in grossly underutilized devices.
 - ☐ Organizations have been slow to deploy network-connected multifunction printers (MFPs) while continuing to maintain underutilized copiers and fax machines.
- ☒ MFPs and other hardcopy devices have experienced significant advances in the areas of document distribution and management, security, wired and wireless connectivity, and color.
 - ☐ Few organizations have implemented these in a way to optimize their output infrastructure.
- ☒ The scan feature on MFPs can be used to email or fax hardcopy documents, or it can be used to digitally capture documents to integrate them into a business process workflow.
 - ☐ As much as enterprises would like to be paperless, paper remains complementary to digital workflows and critical to virtually all business processes. The scan-to feature on MFPs is an effective way to bring documents into a digital workflow.
- ☒ Secure transmission of electronic documents has become hugely important in the healthcare and banking industries, and in functional areas such as finance and legal, as a result of recent legislation.
 - ☐ Documents can now be printed, emailed, or faxed securely by encrypting the print datastream at the point of sending (from a PC, MFP, or scanner) and decrypting it at the receiving hardcopy device. Print jobs can also be sent to and held at a hardcopy device until the user walks up to release them.

Many hardcopy devices now include wireless options for connectivity to networked or mobile devices (e.g., handheld/converged devices, laptops, digital cameras). Additionally, printers are now mobile devices themselves. Such flexibility to print anytime and anywhere increases mobile workers' productivity.

WHAT IS A MANAGED IMAGING AND OUTPUT ENVIRONMENT?

A managed imaging and printing environment is a golden opportunity for cost savings and benefits. Maximizing these savings and benefits means implementing as many of the following elements as possible:

- ☒ Assessment of output device distribution with the goal of implementing a balanced deployment
- ☒ Remote device management
- ☒ Optimized network infrastructure
- ☒ Digitized workflows
- ☒ Outsourcing elements of the imaging and output infrastructure
- ☒ Mobile and wireless connectivity

Assessments and Balanced Deployment

A managed imaging and printing environment starts with an assessment. This is a comprehensive study of a department's, division's, or enterprise's current imaging and output environment with the goal of determining an optimal hardcopy device deployment and network infrastructure. This optimal state strikes a balance between lowest total costs and highest employee productivity, which can be opposing goals. For example, at one extreme, the lowest cost environment would be one hardcopy device shared by an entire large company, but this would yield the lowest level of employee productivity. At the other extreme, the highest cost environment is one where everyone has their own non-network printer. Between these extremes, an optimal deployment is a mix of device types (printers, MFPs, copiers, fax machines), a mix of personal and shared devices, and the right network infrastructure and tools that together minimize costs while maximizing employee productivity.

An assessment looks at usage behavior and business process workflows around hardcopy (print, copy, fax, scan), the hard costs associated with hardcopy devices (hardware, toner, maintenance), and IT support costs around those devices (help desk as well as installation, upgrade, and redeployment IT services). Usage behavior considers employee productivity issues (distance to hardcopy device; frequency and volume of use; device redundancy/backup; and device productivity features such as speed, color, finishing).

Remote Device Management

The increased use of connected devices (printers and MFPs) instead of unconnected devices (copiers and fax machines) to deliver print, copy, fax, and scan services, combined with the use of Web tools for proactive and customized management, provides many benefits. Devices can be remotely accessed and managed using any

Web browser. Remote device management tools allow designated support personnel to do such things as monitor device utilization so they can rebalance device deployment as needed or charge back departments and to receive notification of hardcopy device problems and when supplies are needed.

Managing unconnected or standalone copiers and fax machines in an environment entails physically walking to or traveling to the device to troubleshoot even the simplest of problems. Moving the copy and fax functions to network-connected MFPs allows them to be managed remotely. This approach saves IT time needed to support these devices and improves user productivity through increased device uptime.

Optimized Printer Network Infrastructure

Having the right network infrastructure to optimize one's imaging and output environment refers to the use of one or both of the following types of servers:

- Print server appliances (PSAs) are low-cost servers dedicated to network print services. A PSA offloads the print function typically from a file and print server and localizes network print traffic between users, the PSA, and the print device. This increases print availability and simplifies remote device installation and management. PSAs themselves are easy and quick to install, reducing the need for IT to travel to remote sites.
- Output servers address the need for enterprise applications, such as ERP, supply chain, and CRM, that operate in heterogeneous platform environments. Output servers automate the routing of output to multiple destinations simultaneously (fax, email, print, or content repository).

Digitized Document Workflows and Distribution

Most business processes still involve paper. For example, a business process may follow a digital workflow within the enterprise; however, communication to and from customers, suppliers, and others required to complete a business process often still involves paper. Examples include legal papers, mortgage applications, and car rental contracts. Such paper documents can be brought into the workflow by scanning and then routing them through a business process based on rules or, more simply, scanned to email, fax, a folder, or a content repository. Indeed, scan to email is a key means of reducing faxing costs.

Outsourcing

Strategic outsourcing can be used to lower costs and increase efficiencies. Outsourcing can be applied in many ways, such as:

- For certain applications (e.g., marketing collateral and training manuals)
- To handle peak volume production

- ☒ To turn over hardcopy-device fleet ownership and management in the office, copy center, and/or mail room
- ☒ To turn over IT help desk support for hardcopy devices
- ☒ To adopt a pay-per-use/utility payment model to pay for hardcopy device supplies and maintenance costs (Customers effectively pay only supplies and maintenance costs based on actual page volume, and their contract is adjusted periodically to reflect any changes in actual page volume.)

Connectivity for Mobility

A growing number of enterprises are adopting or considering wireless connectivity solutions for hardcopy devices. Over 60% of the U.S. workforce is mobile at least some of the time — over 60% of those are highly mobile — and many use handheld/converged devices to access enterprise network resources. The growing use of wireless devices in organizations is forcing IT organizations to pay more attention to the hardcopy output requirements of these devices.

Mobile device usage in conference rooms, office hallways, temporary/shared offices, satellite offices, hotels, airport lounges, customer sites, and anywhere business is conducted speaks to the need to support wireless printing. It is difficult or impossible to read email attachments, long documents, and spreadsheets on a 2 x 3in. screen. Hardcopy is often more practical than softcopy for viewing or note taking. Printing is also required when a leave-behind document is needed or preferred.

Besides wireless connectivity from handheld/converged devices to print devices, wireless connectivity between hardcopy devices and the network is also a growing trend.

How a Managed Imaging and Output Infrastructure Works

Table 2 provides a detailed summary of how a managed imaging and print environment achieves its cost savings and benefits.

TABLE 2**How a Managed Imaging and Output Infrastructure Works**

Costs	Savings and Benefits
Direct	
Hardcopy devices and consumables	Fewer/newer/advanced devices (consolidation of brands, number of devices, and of print/copy/fax/scan into MFPs) lower ink/toner, maintenance, and IT support costs. Pay-per-use/utility pricing model lowers costs further.
Space/storage	Reduces space/storage requirements for devices, ink/toner, media, and archiving paper documents.
Help desk	Moving copying and faxing to connected devices (MFPs) plus use of Web tools for remote management equals increased device reliability/uptime and IT time savings.
Server infrastructure	Specialized servers that optimize for remote hardcopy device installation and management and for enterprise applications increase employee productivity and speed business processes in heterogeneous platform environment by automating routing of enterprise application output to fax, email, print, or content repository destinations, and they also reduce IT time and travel costs to deploy/redeploy hardcopy devices in remote locations.
Records management and digitized document workflows/distribution	Digitizing records and document workflows/distribution reduces cost per record, speeds business processes (and speeds the issuance and increases revenue collection for such documents as invoices), reduces print volume and paper document storage, reduces fax costs, increases employee productivity, and increases employee and customer satisfaction.
Outsourcing	Strategic outsourcing can be applied to certain applications (e.g., marketing collateral and training manuals); to peak volume production; to turn over fleet ownership and management of office, copy center, or mailroom hardcopy devices; to turn over IT help desk support for hardcopy devices; or to pay for hardcopy device supplies and maintenance on a pay-per-use/utility payment model. Outsourcing can be more cost-effective and efficient and can free IT and enterprises to pursue more strategic focus, reducing opportunity costs.
Wireless connectivity	Wireless connectivity between handheld/converged device and print device enhances mobile worker productivity. Wireless connectivity between a print device and a network provides for faster and lower cost deployment and redeployment of hardcopy devices.
Indirect/Soft	
Employee productivity	Increases with device uptime (e.g., digital devices [printers and MFPs] are more reliable than analog copiers and fax machines). Digitized documents and workflows automate processes, which speeds processing.
Corporate costs	Digitizing documents increases finding documents for invoicing and knowledge sharing, thereby increasing and speeding revenue collection, reducing opportunity costs, and allowing IT to be more strategically focused.

Source: IDC, 2004

WHAT A MANAGED IMAGING AND OUTPUT INFRASTRUCTURE CAN DO FOR AN ENTERPRISE

Specific Problems Addressed

IDC's study of sites that adopted a managed imaging and output infrastructure finds four leading problems.

- IT support around printing/copying/faxing/scanning
- Hardcopy device driver updates and downloads
- Repairs around printing/copying/faxing/scanning
- Cost and management of consumables

Cost Savings and Benefits Achieved

By implementing a managed imaging and output environment, studied sites achieved direct cost savings of 13–40%, and significant indirect cost savings. Average cost savings were 23%, broken down as follows:

- 40% from reduced IT support costs for printing/copying/faxing/scanning user issues (Print-related help desk calls were reduced from 23% to 11%, a 52% reduction.)
- 25% from reduced costs for consumables
- 20% from reduced costs for print/copy/fax/scan repairs
- 10% from reduced costs to install and upgrade hardcopy devices
- 5% from reduced hardcopy device equipment costs

Indirect or soft cost savings were often cited as the greatest benefits. Specifically cited were the following employee productivity benefits:

- 86% said print-related help desk calls decreased. There were more first-call resolutions freeing up IT for other tasks.
- 71% said device availability increased.
- 71% said they achieved better document workflows and smoother business operations through the use of MFPs for document distribution and management.

CASE STUDIES

Healthcare Provider

A 2,600-user environment covering 23 locations was experiencing problems stemming from managing hardcopy devices in a large number of remote locations and an aging installed base of print devices that were affecting device availability and user productivity. Device driver updates were a major problem. Other problems were the cost of print-related IT support (10% of help desk calls) and the cost to repair print/copy/fax problems (35% of direct hardcopy and IT costs).

This healthcare provider felt it needed to identify its equipment and the utilization of those devices. It expected to find savings from printers that had reached end of life. The provider wanted to have the ability to remove such printers before they resulted in increased maintenance costs. It also wanted to reduce both travel costs to remote sites and end-user support costs.

The heart of the managed solution was a combination of management software, new infrastructure topology PSAs, and manageable devices. As part of this implementation, 15 PSAs were implemented to remotely manage 500 devices. The site also instituted a balanced hardcopy device deployment.

As a result, the company reduced overall hardcopy environment costs by 31% and expects that number to reach 57%. The cost of installing/upgrading devices was reduced by 70%. The cost of repairing hardcopy devices was reduced by 60%. Help desk calls were reduced by 31%.

Another significant benefit was enhanced user productivity from increased device uptime. The healthcare provider indicated, "Ultimately, availability is the biggest area of improvement." It also freed up network servers from print services for other workloads.

Financial Services Provider

A large financial services provider with 17,000 users in the field was experiencing problems stemming from the large number of dispersed financial advisors. Device driver updates were a "huge" problem. Another problem was the cost of print-related IT support. Thirty-five percent of the company's direct hardcopy and IT costs were going to help desk support for printers, MFPs, copiers, and fax machines. Thirty percent of help desk calls were print related.

The managed solution the company implemented included remote device management, balanced deployment, PSAs, and wireless printing. In addition, the financial services provider adopted 217 PSAs supporting 4,000 printers.

As a result, the company achieved the following savings and benefits. Overall hardcopy environment costs were reduced by 31%, and the company expects this number to reach 35%. More specifically, 80% of the savings were in the help desk area while 20% of the savings were in consumables. Help desk savings were driven by a reduction in print-related calls from a 30% share to a 2% share.

Consumables cost savings were driven by a reduction in print, copy, and fax volumes thanks to the PDF creation capabilities of MFPs.

Other key benefits this financial services provider achieved included reduced IT travel costs to install, support, and remove devices and users. Additionally, no server licensing costs were incurred from moving to PSAs.

A senior system engineer with this company reported, "Help desk cost savings are the biggest benefit. Another benefit is how productive it makes users — a balanced deployment leads to more uptime, which translates to higher productivity. The bottom-line benefit will be cost reductions, which have paid for the print server appliances many times over."

Retailer (Grocery)

A retailer with 200 stores and 26,000 users was experiencing problems stemming from remotely managing 2,500 devices in 158 of its stores and 4 distribution complexes. The cost of print-related IT support was a concern (20% of help desk calls). Other challenges included troubleshooting and fixing hardcopy device problems and installing and managing remote devices.

The managed solution the company implemented included PSAs, remote device management, and a balanced deployment.

As a result, the company achieved the following savings and benefits. Overall hardcopy environment costs were reduced by 13%, and the company expects that number to reach 31%. More specifically, 30% of the savings were in the help desk area and another 30% came from installing and upgrading devices. Help desk calls related to print decreased from a 20% share to a 15% share. The removal of fax machines and their replacement with MFPs contributed to savings related to installing and upgrading devices.

Another key benefit this retailer achieved was the reallocation of 75% of an employee's time from print to other server support. The company also reduced costs by removing servers from stores. In addition, it improved document workflows using scan-to functionality on MFPs.

A senior manager responsible for this company's IT architecture indicated, "[Remote] administration frees up engineering types to work on the server end of things instead of dealing with printing issues. They can push a lot of responsibilities down to the help desk arena. This puts the level of first-call resolution much higher, increasing customer satisfaction."

IT Direct Reseller

A direct reseller with 500 users was experiencing problems with print-related IT support (25% of help desk calls), the costs and management of supplies, and the costs of repairs for hardcopy devices.

The managed solution the company implemented included outsourcing, remote device management, balanced deployment, and document imaging and output management tools.

As a result, the following savings and benefits were achieved. Overall hardcopy environment costs were reduced by 14%, and these benefits are expected to double to 28%. Help desk calls related to print decreased from a 25% share to a 5% share.

Other key benefits this reseller achieved were the increased availability of devices and improved document workflows.

CHALLENGES

Providing a solution to optimize an organization's output infrastructure necessitates that a supplier is able to work across groups within an organization that share responsibility for managing the various elements of the infrastructure. These groups will be required to share the burden of implementing a solution while experiencing various degrees of both hard and soft cost benefits. Uneven buy-in to the solution by these various organizations may affect its ultimate outcome and savings. A solution provider needs to help customers overcome their fragmented responsibility structure for hardcopy costs to maximize savings and benefits. This endeavor will often entail targeting C-level executives.

FINAL THOUGHTS

The opportunity to achieve significant savings through a managed imaging and output environment is real. To help organizations maximize the return on investment (ROI) in their imaging and output infrastructure, IDC offers the following vital advice to vendors and their customers:

- ☒ Assess an external party, regardless of whether that party or the enterprise itself will do the implementation. Look for a partner that can articulate the benefits and pitfalls of hardcopy device consolidation and how it will go about ensuring that its recommendation will address both cost reduction and employee productivity. Maximizing one over the other will fail to achieve true ROI. Also look for a partner with a track record of satisfied customers.
- ☒ Ensure the implementation plan details and maximizes both cost savings and employee productivity gains.
- ☒ Get early buy-in from both C-level executives and end users.
- ☒ Implement as many elements of a managed imaging and output environment as appropriate for the enterprise.
- ☒ Develop an enterprisewide implementation plan.
- ☒ Train end users on new equipment and processes.
- ☒ Create, implement, and enforce policies to sustain the desired environment.

Copyright Notice

External Publication of IDC Information and Data — Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2004 IDC. Reproduction without written permission is completely forbidden.