Executive Summary

Print has completed the output analysis for the DOE Agency. The purpose of this document is to report on Print’s findings.

Printers

The agency has a fleet of 270 Printers collectively, printing an average monthly volume of 370,000* prints. The printer fleet consists primarily of HP LaserJet printers, however, encompasses 60 varying models produced by HP. The 60 varying HP models have 50 associated toner/ink jet cartridges. Each model’s respective volume is listed below.

Current Printer Fleet

The DOE is currently spending approximately $15,000 + (quantifiable cost) per month to produce printed documents from all HP and miscellaneous other printers (except Xerox). This number includes direct costs of printer supplies, printer parts & identifiable maintenance, and hardware – it does not include an allocation for indirect costs (i.e., IT support). Given that the DOE produces, on average, approximately 370,000 prints per month, the cost of each page (excluding paper) is approximately $0.04121. (For more information, see “Cost Analysis”)
Copiers

Currently the DOE has a contract with the Xerox Corp. for the current copier fleet, which consists of approximately 70 devices. This equipment supports all of the walk-up copying done by the DOE, but also consists of approximately 20 connected, multi-functional devices that print. In all, there are 28 different models which make-up this fleet of 70 devices. There are 37 analog devices and 33 digital devices.

The average monthly expenditure, which covers equipment, service and supplies to support this fleet, is approximately $45,000. The original contract was written in 1997, and has been modified and extended until an anticipated expiration in 2005. Upon the original writing of this contract, there were 700,000 images to be generated on the Xerox equipment. If the DOE were running this average of images on this fleet today, the respective cost per page would be $0.0643. However, the DOE, following the trend throughout the business world, is steadily reducing the number of walk-up copies required, but has an increasing requirement for connected, digital printing. The current average of walk-up copies generated as compared to prints today is approximately one to two. The DOE does not yet fit within this pattern, but shows that the trend and need is definitely growing toward this pattern and ratio.

Today, the DOE averages a bit less than 600,000 images (587,000/mo) total on the Xerox installations. Approximately 108,000 of these are generated as prints. When these prints are added to the total prints generated from the local networked printers, the total requirement for prints versus actual walk-up copies is virtually equal. (478,000 to 479,000)

Additionally, this reduced requirement for walk-up copying increases DOE’s cost per page for this program, and the Xerox program is now averaging approximately .0767 per page. In Print’s opinion, this increasing trend will surely continue as the DOE advances to the normal current patterns, and requirements for document production put greater demand on printers versus walk-up devices. To modify Xerox’s equipment fleet (which is more than half analog) to handle this conversion to printing demand would certainly cost the agency even more than the current equipments’ cost per page.

![Current Copier Equipment](image-url)
Copying and Printing Summary

If we analyze the total expenditures for the DOE, combining the current cost of the Xerox contract, which is generating 479,000 walk-up copies, 108,000 prints, and costs $45,000 per month, with the HP program currently, which is generating 478,000 prints and cost approximately $15,000, we have a total of $60,000 per month, quantifiable cost. This $60,000 monthly cost is realizing the department approximately 1,000,000 images generated monthly. Therefore, the aggregated average cost per page for the department currently is approximately .06 per page.
Other Document Production Areas

Print extended our review to other areas of document production, and also took measure as to the current methods utilized for faxing, filing of documents and information, and color production needs. Each of these areas is interwoven into the flow of information throughout the department, and requires that we determine if better methods are available. Assessing the needs collectively avoids costly redundancy in equipment.

Faxing: The dependency upon conventional fax methods varies greatly between programs. However, virtually each program does have some measure of fax requirement. Print has looked into this area in general, to see if current technology would present better, less costly and more efficient means for transferring this information. We have discussed each department’s assessment of their level of fax need, and have created a general overview of current cost. Print utilizes the standard methods of faxing, looking at the cost per page perspective, and making a few standard assumptions from the industry “norm” statistics as a basis for cost. This should give the DOE some measure by which to determine whether alternate systems are beneficial and/or desired.

E-Filing: One of the key areas of potential improvement in document management for the DOE would be in creating a system for electronic filing. Throughout the agency Print found extreme concern and need for streamlining the current processes involved in manual hardcopy filing. For those areas that routinely depend on singular copy files, and must share or recreate this information internally or for external use, the lack of having the information in digital format is labor intensive, extremely time consuming, inefficient in accuracy, vulnerable to mistakes, and costly. Again, as with faxing, there are programs within the agency that suffer more than others due to lack of means to bring information into an electronic filing format. Print has explored one potential method of improvement for the DOE, and performed an online conference demonstration with one of the key people within the SPILLS program, Jack Barfield. This was done to give Print and DOE feedback as to whether or not this system would enable them to handle their files in such a manner as to eliminate some, if not all, of the current frustrations. We have included a brief summary of findings from this demonstration. (see “Solutions: Electronic Filing”)

Color: Color imaging is rapidly becoming an issue within each department. Requirements for standard color sizes, as well as wide-format specialty production are high. Several areas have resorted to purchasing very low volume personal color printers. Although these are very inexpensive to purchase, the extremely high operational cost associated with much volume production make them very prohibitive. Additionally, quality and productivity needs are not met with this type of solution. We suggest a separate distinction between the need for large format specialty products, (specific to the requirements for the GIS and other divisions that routinely need this production), and the more common requirements found within each department for standard-size color usage. (Standard size is defined as 81/2 x 51/2 up to 11 x 17 inch)
Cost Analysis:

Fax

There are several elements to the overall cost per page for a fax transmission or receipt:

- Equipment
- Service
- Cartridge (toner)
- Drum (separate consumable in some models)
- Excess hard copy production
- Phone line charges
- Long distance charges

Although with the varied models existing within the DOE it would be time prohibitive to analyze each one, the following general information is shared so that the DOE may have perspective as to the typical cost associated with this facet of document management. It is a true area of undocumented cost in most businesses/organizations.

<table>
<thead>
<tr>
<th>Cost Description</th>
<th>Cost (per month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>$42.00</td>
</tr>
<tr>
<td>Line charges</td>
<td>$30.00</td>
</tr>
<tr>
<td>Long distance charges</td>
<td>$20.00</td>
</tr>
<tr>
<td>Toner use</td>
<td>$40.00</td>
</tr>
<tr>
<td>Service/maintenance</td>
<td>$15.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$147.00</strong></td>
</tr>
</tbody>
</table>

Average number of inbound faxes: 500/fax unit/mo
Average cost per fax: $0.29 each page

Most departments within DOE have two fax units, or more.

The overall number of fax units throughout the DOE is approximately 30. Using the cost considerations above, an estimated $4,410 per month is spent on fax requirements.
Cost Analysis:

Color

An area of rapidly expanding volume and requirement is color. DOE has several very small personal color printers, as well as a growing fleet of mid-sized HP color laser printers. To this, the DOE also requires considerable use of wide format color production for GIS, and many other departments that must produce maps, drawings, etc. in large format.

The range of cost for an 8½ x 11 size color print on the current equipment ranges from a conservative minimum of $0.30/page to $0.75/page dependent upon the model/device, as well as varying fill requirements. Often the quality is poor or inconsistent on the smaller devices, and they are extremely slow. Many areas need up to 11x17 size prints. To utilize the Print Center downstairs is one area of production that is no longer a cost savings for typical print needs for normal volume. The current cost for a standard 8½” x 11” page is $0.69, with 11” x 17” @ $1.50 ea.

The wide format 750C HP units are operationally costing over $1.00/ft. (supplies).

Print feels that a quality, consistent and affordable solution for this increasing color demand is necessary, along with a management/tracking system for accountability.
Cost Analysis

Filing

The standard method of hard copy filing is creating a costly, inefficient situation for DOE in many programs. Information that is shared has to be manually pulled from shelves, taken to a copy room, sorted through for pertinent documents, often removing staples, etc. in this process. The copies are then made on the copier manually, the originals replaced into the file folder, in proper order, stapled, walked back to the shelving area, and filed again. The copied version is often hand delivered or mailed or faxed to appropriate requesting location(s). Often there are situations where several people may need to work on the same information contained in a single file. This creates issues just in locating who currently has the hard copy, and requires duplication of much of the material so that access from more than one worker can occur. When additions or modifications to contents occur, this information is then manually added to the hardcopy file, again requiring the same walk-to, search, and walk-back system. This method is highly vulnerable to misplaced, lost, and misfiled information, but the labor cost associated with this system, though not quantifiable, is enormous.

Print would see this as a second phase project, after the primary printing/copying solution is implemented. A reasonable, simple, and efficient system for conversion to electronic filing exists. Print recommends DOE review of the ImageTag system. This system of storage and retrieval mirrors the exact logic used in hard copy filing, usually making it an easy system to learn and incorporate. The cost is extremely affordable in comparison to some other systems that are not as friendly to use. Cost is determined by a number of variables, to include storage space requirements, number of people with access, and scanning requirements.
MISSION

DOE’s desired output strategy is a function of convenience, functionality, location, task-specific activities, and cost. Print’s focus is to deliver a cost-advantageous program wherein the DOE will have a management strategy for document production that will fulfill the entire organization’s output needs. Our solution strategies will offer the following advantages:

Streamlining of products
Reduction in overall necessary devices
Simplification of management
Reduced IT time
Visibility to cost
Increased efficiencies
Reduction in Cost
Cost Containment Strategy
Tracking and Reporting System
Print, Inc Solutions

Document Output Strategies are a function of several potential factors, which may include:

Convenience
Confidentiality
Politics
Task-Specific
Copying
Location
Status
Volume
Color
Features & Functionality

Confidentiality: Areas where high volume of confidential information is printed will be treated with assignment of private mailboxes, print-on-demand functionality, and/or close proximity to printer.

Volume: All areas volume requirements are key to productivity considerations, and reasonable turn-around time for document production. Because many of the areas in DOE have an inordinate number of users versus volume (volume per user is very low), the volume demand per device is lower than average.

Copying/Printing: Consideration has been given to the ratio of walk-up copies versus printed jobs. Convenient digital walk-up devices have been recommended for the areas that require considerable copying yet. It is anticipated that much of the existing walk-up copying will be converted to printing when scanning, digital sending, and fast, printer duplex, plus finishing capabilities are provided.

Color: Standardization of laser quality color prints and copies is uniformly provided. These devices will provide fast, consistent quality, affordable color solutions, that are also convenient to each area. Tracking devices will allow for the accountability for volume control. These are installed on the server, and do not require security numbers. Color Scanning capability is optional to those areas where the volume demand for this application supports the cost.

Features & Functionality: Areas requiring 11” x 17” color or B&W printing or copying have been given this capability. Scanning, as a much needed, readily available capability is standard in all areas. This scanning carries capability uniformly for up to 11” x 17”. size. These functions and features have been standardized and logistically located throughout the areas. Recommended in areas where users have expressed the need will be offered either color and/or digital senders that serve as scanning devices.
Disposal/Redeployment of Assets

Equipment deemed inefficient, obsolete, or operationally cost prohibitive:

- DJ1220C
- LJ100
- DJ22C
- DJ2000C
- LJ2D
- LJ4SIMX
- XEROX DC332
- XEROX 1025
- XEROX XD155
- XEROX DC255
- XEROX DC230
- XEROX DC432
- XEROX 5837
- XEROX 5614
- XEROX 5065
- XEROX 5018
- XEROX 5036
- XEROX 5034
- XEROX 5053
- XEROX 5028
- XEROX 1012
- XEROX 1090
- XEROX 1065
- XEROX 1025
- XEROX XD155
- XEROX DC255
- XEROX DC230
- XEROX DC432
- XEROX 5837
- XEROX 5614
- XEROX 5065
- XEROX 5018
- XEROX 5036
- XEROX 5034
- XEROX 5053
- XEROX 5028
- XEROX 1012

Equipment deemed to have remaining useful life and worthy of continued use or potential redeployment:

- LJ4050
- LJ4100
- LJ1100
- LJ8100
- LJ4000
- DK750C
- LJ8000
- LJ8500
- LJ4550
- LJ4500

Copier Program: The strategies provided would eliminate the need for this program
Recommendation Strategy A  
(Standardization)

**RECOMMENDED PRINTER FLEET**

![Pie chart showing recommended printer fleet]

**Solution Pricing**

- **Current cost per page**: $0.06
- **Current Monthly Costs**: $65,000
- **Proposed COST PER PAGE RANGE**: $0.037-$0.039 *
- **Proposed Monthly Cost**: $37,000-$39,000
- **Monthly Savings**: $28,000-$26,000
- **Yearly Savings**: $336,000-$312,000
- **Five Year Savings**: $1,680,000-$1,560,000

*allows for selection process/variance in configurations by departments
Optional Strategy B
(Consolidation)

Basic Plan Design

Distribute ~48 – 50 ppm Digital Copiers with Faxing, Scanning, Printing Options
Current 4000-8000 Series HP Printers Remain
Remove older, less efficient printers
Add HP 8550 Color Units

Cost Analysis:

Category 5 Unit:  $600/month w/finishing – Approx 5/yr rental cost ea.
(based on WA ST Contract)
Total Required:  $28,800/month
Copies Included

Additional Costs:

Software- Docushare Licensing Fees
(Determined by seats)
Estimated minimum:  $50,000-$60,000 upfront purchase cost
Annual Maintenance Fee (not optional)  $6,000-$8,000

Fax Capability – Per Seat Charge Applies
Scan Capability – Per Seat Charge Applies
(Total Cost Estimated for 1,500 Employees:  Approx $2,000/mo)

In addition, for convenience printing and to utilize current assets:
Leave Current 4000 Series and 8000 Series HP Printers in Position
(Current Cost per Page: .04/page)
Estimating one eighth total DOE volume remains with printers, the cost would be:
$5,000/mo.  (125,000)
Dependent upon area, these could be eliminated as they failed, and not replaced.
This would force the volume to the central areas, further consolidating B&W printing and
copying, reducing gradually the number of devices.

Color:  Add two HP 8550 MFP to each Floor @ HQ
Distribute one per outlying location, (except for low personnel areas)
Total Cost Per Page (estimated) - $0.25/page
Estimated Volume for DOE initially- 12,000 pages
Total Cost for Color Add - $3000/month
Solution B Pricing:

$ 28,800/month- Rental of MFP Copiers (WS Contract)
$ 1,500/month- software cost spread over 60 months
(cost estimates only) $ 2,000/month- estimate only for fax/scan seats monthly
$ 5,000/month- estimated cost for prints on remaining printers
$ 3,000/month- estimated cost for color convenience printers

Total for Solution:    $40,300/month
PROPOSED COST PER PAGE: $0 .0403
Monthly Savings:        $24,700/month
Yearly Savings:        $296,400/yr
Five Year Savings       $1,482,000
Primary Impact: Option A Document Output Strategy
Outsourcing

Capital Replenishment for Remaining Hardware:
DOE should seek cash back for residual value of all existing HP 4000 and 8000 series printers that will remain in use, if project is outsourced. Specific amount would be identified upon definition and clarification of strategy. These could then be utilized in solution, but not directly owned by DOE departments.

Capital Expenditures Eliminated:
Capital Expenditures for new or replacement equipment, and therefore, budgeting and appropriation efforts, will be eliminated.

Flexibility:
As output strategy grows and/or changes (due to growth or seasonal requirements), printers can be added at any time with no capital expenditure. Individual printers may be upgraded / downgraded without penalty. Utilizing a outsourcing program, cost/page is volume based and should be adjusted once per quarter. This flexibility should be part of management setup.

New, Standardized Technology:
Remove aged printer fleet and inappropriate copier program and replace with state of the art HP technology. Reduce models of equipment to a minimum, streamlining and creating efficiency, user commonality, and rightsizing of devices. HP standardization reduces risks of connectivity issues associated with multiple drivers and interface with legacy software and applications.

Service, Supply, & Maintenance:
On a Cost/Page program, all areas of cost are included, except for paper.

Increased Efficiency:
Drastically streamline number of devices, employing faster, more capable and versatile output printers with copying capability closer to point-of-need with HP Multi-Functional technology.

Maximize Current Assets:
Build upon the reliable HP technology platform already endorsed by the IS division. Utilize all current assets that are still viable, returning capital dollars to the budget through a buyback program.

Simplified Monthly Billing Statement:
All service, supplies, and hardware are inclusive in an outsourced cost/page management program. DOE receives one simple invoice monthly, detailing usage by device.
Tracking software should be provided that would allow DOE management visibility as to status of any device at any time. Online direct ordering of supplies by users would eliminate purchase orders, processes, and accounting.

**Training:**
Users should be completely trained on all operational benefits to the new devices, so that maximum advantage for efficiency is realized. Ongoing training should be available and required.

**Refresh Technology:**
As any area’s needs may change, DOE should have the flexibility to add/delete or upgrade technology by individual requirement with a Cost/Page program.

**Increased IT Time:**
Allows IT to concentrate on core competencies. Program must include service that manages all printer/copy issues.

**Increased Control:**
Document Production expense becomes identified, documented and controlled. Budgeting by floor, department, workgroup, or individual becomes much easier.

**Reduction in Soft Costs:**
Areas of savings include:
- Reduced IT time dedicated to output systems
- Reduction in invoices processed (one per month)
- No outside service cost
- Re-investment of capital dollars

**Proactive Management:**
Visibility and tracking of volume requirements and utilization patterns help identify areas of changing need and potential frustration. Tracking performance of specific devices determines any problematic areas before users/production is affected, should be a required element of this program.

**Quarterly Reviews:**
A thorough review of performance, volumes, and issues should occur each quarter with appropriate DOE personnel. Each department should have visibility as their independent statistics to determine if change is necessary or desired for any areas.
Document Management
Phases for Migration

Phase I
Implementation of new output strategy for solving the needs and requirements associated with B & W printing and copying, and production of standard-size Color.

Phase II
Implementation of new strategy for solving the needs and requirements associated with transfer of hard copy documents electronically, eliminating fax process
Implementation of new strategy for production of Wide-Format Color

Phase III
Implementation of a system for electronic filing and storage