Printing Large Format Technical Documents—What's Best: Print In-house or Outsource?

In business, one of the many keys to success is effective control over expenses, no matter how big or small the organization. One area that often gets overlooked in AEC business operations is the cost of printing large format technical documents. Because large format technical documents are such a critical part of an AEC firm's operations, the question becomes; should you print your large format documents in-house or outsource the printing of them?

Like many questions, there is no clear cut easy answer; it depends on a number of factors. For example, if you just consider the actual drawing costs as measured in cost/sq. ft., it generally is less costly to print in-house.

Based on current market survey information, outsourced printing costs can be as high as $40/page for 24" x 36" color printed maps and construction documents and $4.50/page for 24" x 36" black & white printed construction documents. Printing these same documents in-house can usually be done for much less with an investment in a large format printer. In fact, recent customer data shows it is not unusual to save 46% or more on your outsourced large format printing costs when printing in-house.

However, this argument oversimplifies the decision making process, because there is more to the cost of printing large format technical documents than just the cost of the print itself. The remainder of this white paper explores the other critical decision factors, as well as the pros and cons of each. In the end it is up to a company with its own unique set of needs and objectives to determine which approach is best.

Cost Considerations—Outsourced Printing

Before considering what it would take to print large format documents in house, let's first consider some of the key cost components of outsourced printing:

OUTSOURCED COST CONSIDERATIONS	POTENTIAL OUTSOURCED COSTS
Document costs	Normally measured in cost/sq. ft. Current market survey information shows outsourced printing costs can be as high as $4.50/page for 24" x 36" (D-sized) black & white documents, or $.75/sq. ft.
Shipping costs to send documents **to and from** *the outsource printing supplier*	Average shipping costs to print 20 D-sized drawings on 20 lb. bond shipped within a 20 mile zone: • $7.00/shipment for 2-day service • $10.00/shipment for overnight service Depending on how much printing is outsourced, these charges can easily add up to hundreds if not thousands of dollars over the course of the year. Unless the print supplier offers free delivery or you have a driver to do pickups, the above shipping charge can be doubled if you have to send documents back to the printer for copying.
Extra prints that are ordered in addition to the required document quantities in case you need more than you think, many times these end up as waste	Figure the actual cost/sq. ft. for the document printing and then multiply this by how many documents you actually throw away. If your company is committed to acting sustainably, these types of practices are contrary to those sustainable objectives.
Extra prints that are ordered in addition to the required document quantities to get a lower unit cost	Similar to the waste cost above, by ordering more documents, you may be able to lower the document cost/sq. ft., but are the extra prints really ever used or are they wasted?
Time spent preparing print jobs/files to get them ready to send to the outsource printing supplier	Time is money, so this should be considered a cost factor. Someone has to take the time to digitally prepare documents to be sent either by CD or uploaded to the vendor's ftp site so they can be printed.

Cost Considerations—In-House Printing

IN-HOUSE COST CONSIDERATIONS	POTENTIAL IN-HOUSE COSTS
Document costs	Normally measured in cost/sq. ft. Usually less than outsourced printing, however consider the operational and machine acquisition costs to determine an accurate document cost.
Cost of device – outright purchase, lease or cost per copy	• For purchase or lease requirements, Very Low Volume (VLV) printers start at $3к and up, and for Low Volume (LV) printing, can cost up to $15-20к depending if you require black & white (B&W) or color. • Instead of buying the machine, there are providers that will only charge you for what you print, plus a nominal monthly service fee. This model gives you a unique option to pay for only what you use without making an upfront investment, but have the convenience of an onsite device.
Cost of supplies, including paper, inks or toner (if a color printer)	• Depending on the type of printer and volumes printed, B&W toner and color ink costs vary and add to the cost of your printing. For example, LV B&W print applications averaging 1,500 sq. ft./month, toner can add 1.5-2 cents/sq. ft. to the printing cost, whereas inks can add 3-4 cents/sq. ft. • To understand the true cost of supplies and operation, talk to the hardware provider and get the exact costs from them, including the expected yields of the consumables.
Labor cost to run the device	• In low volume office environments, there is usually not a dedicated operator to run a printer, so each user submits and retrieves his/her own prints. • This requirement makes it necessary to ensure the printer has features that are easy to use for the novice walk-up user.
Maintenance and upkeep	• For low volume applications, this cost is normally low and the amount can be factored into a monthly lease cost. • Devices can also be obtained to be run on a cost per print basis, so you only pay for what you use, with a normally low monthly fixed billing amount.

Which Approach is Best?

It's difficult to recommend which approach is best because many AEC Professionals have unique needs, requirements and resources. It is really up to the company to determine the best approach, however the below pros and cons should help in the decision process.

OUTSOURCED PRINTING — PROS/CONS

PROS

- No device acquisition cost or maintenance fees.
- Free up capital to be used in other areas of the business.
- Print and pay for only what you use:
  - May mean ordering excess prints that get thrown away.

CONS

- Outsourced printing in general tends to cost more because of the smaller print quantities and paying a third-party vendor markup.
- Outsourcing can be complicated and require management of your vendors:
  - Is your vendor giving you the best price?
  - Is the quality meeting your requirements? If not, what recourse do you have?
  - Do you have the internal resources to manage the vendor?
- You may have to pay for document shipping costs:
  - Because of paper weights this can be expensive.
  - What is then the real cost of the outsourced print?
- If scans are ever required, this can cost additional.

IN-HOUSE PRINTING — PROS/CONS

PROS

- Because large format documents for an AEC organization are mission critical, control over quality is very important. Large format printing is not the same as making office copies:
  - Sometimes this quality assurance can only be done in house.
- In-house printing in general tends to cost less because you are able to control what you print and how it is printed to help keep costs as low as possible.
- Print only what you need and stop paying for excess that you might not need or don't ever use.
- Better manage your time by printing on your own schedule and better meeting demanding deadlines.
- Have more flexibility and make small unplanned print runs:
  - Don't worry about planning and preparing to outsource large jobs.
  - Better manage schedule and peak printing requirements with the ability to print on your terms.
- Flexibility to provide document scanning when needed. Many printers today have the option to add an integrated color scanner.

CONS

- Device acquisition cost (purchase or lease).
- Device maintenance and upkeep cost.
- Cost of supplies (toner and inks).
- Potential headache factor. Installation, maintenance, application compatibility, and lost productivity.
- Future technology upgrade costs (PC's/servers and software).
- Opportunity cost of the facilities space used to place the printer.

SUMMARY

In the end, it is up to you to decide the best approach given your organizations requirements and resources. Check with others in your industry and see what they've done and how they've approached this opportunity. A key industry trend worth noting is decentralized printing. In the AEC centric project world that means files are digitally distributed today more than ever, and fewer hard copy documents are provided. This means more rather than less flexibility is needed today to ensure you have high quality large format technical documents when and where you need them.

Canon

CANON SOLUTIONS AMERICA

Large Format Solutions
5450 North Cumberland Avenue
Chicago, Illinois 60656

1-800-714-4427 | 1-773-714-4076
Fax 1-773-714-4056
email: us.info@csa.canon.com
www.csa.canon.com

LFS-51278 DS 4/13 CC1/PDF