Saving Money on Remanufactured Printer Supplies Is Harder Than It Sounds

Some enterprises are considering remanufactured supplies as a way to cut costs. IT managers, purchasing specialists, and managed print services buyers must first ask hard questions when evaluating remanufactured supplies.

Key Findings

- Simply buying less-expensive supplies sounds like it should provide quicker and easier savings than optimizing the enterprise's printer fleet, as Gartner has long advised.

- Not only are remanufactured supplies priced 20% to 70% below original supplies, they are supposed to conserve resources and create jobs.

- Though some Gartner clients praise their remanufactured supplies, others complain of short yields, cartridge failures, poor image quality and inconsistency.

- Very few buyers of remanufactured supplies test their supplies' yields, cartridge failures, or image quality rigorously enough to really know whether they're getting a good deal.

- Done wrong, remanufacturing can undermine cartridge recycling programs or leave behind e-waste.

- Most remanufactured supplies lack the kinds of certifications that would satisfy all concerns about yield, failure rates, image quality and environmental practices.

Recommendations

- Stick with your original suppliers, unless you've seen independent laboratory validation of the yields, failure rates and image quality of the remanufactured supplies you are considering. Ensure that unusable and worn parts are properly disposed of.

- If you elect to purchase remanufactured supplies, then ascertain whether your supplier can provide tested, certified cartridges in the quantities you'll need across the range of printer models you own. Most organizations use dozens of different cartridges.

- If you can't find a supplier that can satisfy these requirements, then stick with your original suppliers. Avoid trying to measure the yields or reliability in the field as there are too many impediments to accuracy.

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- Remember that supplies are only *one* of your printing costs, and aggressively manage your office printing practices to cut all of your hard costs by 10% to 30%. Don't sell your opportunity short.

- Consolidate your supply and equipment purchasing, so that you can negotiate a good deal on original cartridges.

ANALYSIS

Gartner has long advised clients to take control of their office printer fleets and reduce their spending by 10% to 30% – and to do so without relying on remanufactured supplies. Though many enterprises succeed in optimizing their printer fleets, others are intimidated by the time and effort involved. They sometimes ask whether they should take the seemingly obvious step of replacing brand-name supplies with cheaper remanufactured ones, thereby reducing spending and environmental waste at the same time. An enterprise considering such a switch should first ascertain whether the promised savings will be undermined by shortcomings in the yields, image quality, reliability, availability and environmental merits of the remanufactured supplies.

What's Wrong With Remanufactured Supplies?

Very few Gartner clients complain to us about the reliability, yields or overall quality of original manufacturer's printer supplies. However, they often comment in client inquiry sessions on negative experiences with remanufactured supplies in the context of large printer and multifunction product (MFP) fleets. Some eventually find a supplier of remanufactured cartridges that they are happy with, but many give up the search, returning to their original suppliers.

In either case, their comments shed light on what to look out for:

- **Yields.** Clients, who attempt to measure yields on remanufactured supplies, sometimes find they are shorter than with original supplies – as we have heard from two of the largest U.S. municipal governments. The fact that this only happens some of the time itself points to a problem of unpredictability.

- **Image quality.** Few organizations complain about black-and-white image quality with remanufactured supplies, but many report that remanufactured color images look inferior or at least noticeably different. This is not to say that black-and-white quality should be taken for granted, either. One national government that mandated its agencies purchase only remanufactured supplies later discovered that users had to reprint black-and-white documents up to five times to get readable versions.

- **Cartridge failures.** Some clients also complain about cartridges that either don't print or fail far ahead of schedule. Others, including an auto parts maker, a city government and an investment company, told Gartner that they had experienced burst cartridges that leaked toner into printers. Though cartridge suppliers will usually replace failed cartridges at no cost, the customer must still return – or at least report – the failed unit, on top of the disruption in printer service, and the time spent reporting it. This is more than inconvenient, since corporations typically value a deskside visit by IT staff, at $50 or more in soft costs. A small municipal government wrote a contract clause to protect itself, but still allows a failure rate of up to 3%, compared with rates that are typically well below 1% for OEMs. Looking forward, tolerating high levels of failed supplies collides with the goals the organizations are now setting to streamline their supply inventories to minimize obsolescence and theft by employees.

- **Availability.** If you have a typical printer fleet with dozens or hundreds of different models, you may find remanufactured supplies for only part of the printer fleet. For new cartridge designs, it takes months for remanufacturers to catch up. And, although HP, Lexmark, and other top brands are plentiful, cartridges for lesser-known brands are hard to find. Some customers also report that suppliers cannot actually provide the quantities they need at the time they need them.

- **Regional variations.** Though most MFPs and printers are sold worldwide, the remanufactured supplies are not always available from the same remanufacturer in different regions, because of the limited scope of operations for supply retailers as well as importation restrictions in some locations. Though remanufactured supplies are widely sold at very low prices in some developing countries, the image quality and reliability are often very poor.

- **Uncertainty.** Some customers report finding a good supplier after a period of trial and error, though others say they have given up the search. Examples of this include a large accounting firm that had listed the remanufactured brand in its corporate purchasing portal only to run into quality problems. One large wealth management firm conducted its own tests and discovered a 13% shortfall in page yields for black-and-white cartridges and more than a 50% shortfall for two-color cartridges.

- **Environmental and social impact.** Conversations with remanufacturers and their wholesale customers raise yet another set of concerns about whether remanufactured supplies deliver the environmental and societal benefits that customers may assume:

- How much of the toner cartridge is actually reused? Remanufacturers do not simply add fresh toner to the same mechanism, but must also replace any worn components with newly manufactured ones from a parts supplier.

  - How often are the cartridges reused? Some remanufacturers reuse their spent cartridges only once before passing on the empty cores, but others may recirculate them as many as eight to 10 times.

  - Are spent cartridges and components recycled in the end? Supplies and components eventually wear out. Original equipment manufacturers run recycling programs to receive and disassemble spent cartridges. They typically recycle part of the cartridge and dispose of the rest. The recycled part will end up as raw material for some other manufactured item, such as outdoor furniture or construction material. HP and Xerox have also begun closed-loop remanufacturing on a few models, where recycled cartridge shells are actually melted down to make new shells. In some other cases, usually involving high-volume MFPs and printers, the manufacturer reuses the parts in new cartridges.

  - What happens to the parts that cannot be recycled or reused? Though some supplies are remanufactured in well-run factories with proper trash disposal, others are remanufactured in cottage-industry conditions, sometimes in developing countries, raising concerns about e-waste. In pointed conversations with remanufacturers about the disposal practices in emerging countries such as India and China, we have never been able to ascertain where the scrap components and unused toner end up.

  - Who does the remanufacturing and under what working conditions? Cottage-industry remanufacturing has sprung up in India, China and other emerging countries. Though they provide employment, it's difficult or impossible for the purchaser to ascertain what work and safety conditions are in place, or even where it is done.

How Can You Ascertain Whether You're Getting a Good Deal?

The most reliable way to verify yields is by testing a random sampling of remanufactured cartridge output against consistent benchmark documents of known image density. In these tests, the cartridges are usually run until the printer issues a low-toner alert or, more laboriously, until the print quality begins to deteriorate. Such testing involves multiple printers (to correct for differences between individual machines), large quantities of paper, time, and labor to set up the test and run the measurements. It usually involves software to control the process, imaging equipment to measure image quality, and a methodology to evaluate the quality of output. The results should be repeated periodically, since the manufacturing facility may change, even when the brand is the same. Some managed print service providers have done such yields testing for years, and they are specifically documented in International Organization for Standardization and International Electrotechnical Commission (ISO/IEC) 19752:2004 (black and white); ISO/IEC 19798:2007(color) and related standards.

Separate tests must be conducted for different cartridges of different brands and repeated from time to time. One diligent aviation company printed a quarter million pages just to test three cartridges for a single printer model.

Rather than rely solely on remanufacturer's claims that it conducts tests, validate these. Yields and reliability testing should be performed either by the customer or, ideally, by a reputable independent quality-testing laboratory at the supplier's expense. Before relying on blanket statements of the level of quality that remanufacturers may offer, customers should insist on seeing documentation from the laboratory showing test results. Note that this is not the same as mere certification of staff training around standard practices or even adherence to good manufacturing practices, because it measures what should really matter to customers, which is the result.

Why Not Just Test Your Cartridges in the Field?

The same problems that make a printer fleet hard to manage also make it a poor test bed for remanufactured supplies. Some Gartner clients take periodic or occasional measurements of their yields in the field and compare them with the manufacturer's advertised yields. For example, one automobile maker uses the vendor's printer utility to monitor page counts and then divides them by cartridges replaced. Though such field reporting can reveal drastic shortfalls, premature failures and very poor image quality, it's too imprecise to use as the basis for demanding a refund. In other cases, yields testing in the field would mean introducing a whole new set of measurements. For example, the IT department in a Middle Eastern bank suspected their supplies' yields were falling short but needed evidence to reverse the cost-driven selection made by their Purchasing Department. They were unwilling to buy and deploy software and to budget employee time to monitor page counts. Even if you already measure page counts, field tests introduce uncertainties of their own. For example, coverage varies from page to page and from job to job; users remove cartridges too early or too late; printers are set to apply different levels of toner (the darkness setting); different paper stocks behave differently; and even humidity and temperature can affect yields. Though improved printer monitoring tools make it easier to measure how many pages were printed, some measure only what the user submitted to Windows for printing and not what was actually printed. Such tools

also ignore the burgeoning populations of stand-alone personal printers, personal all-in-ones, and desktop fax machines, each of which have especially high supply costs.

Even in a streamlined, closely managed fleet with only a few standard models that are well maintained, in-the-field monitoring would be a poor substitute for lab testing. All the more so in the loosely managed printer fleets that many organizations have – untold brands and models of different ages and condition and scanty records on equipment inventory – let alone on yields and usage.

The Burden of Proof

Some remanufactured supplies deliver equivalent yields, reliability and image quality to new original-manufactured ones, and others do not. Some are remanufactured in a way that minimizes waste, recycles what cannot be reused, and responsibly disposes of what cannot be recycled. Others fall short. The problem is that the burden falls on buyers to ascertain which supplier can reliably deliver what they need in different locations and at what level of quality. If remanufacturers adopted a universal program of comprehensive quality testing and certification by

independent laboratories, your choices would be much easier. Despite admissions by remanufacturers about the industry's past shortcomings, boasts about years of progress, and sales talk about having reached higher levels of quality than originals, few customers ask for – let alone obtain – independent laboratory certification. Buyers are consequently forced to either stick with original supplies or trust the remanufacturer or their dealers to uphold quality against the many supply sets for the different printers, MFPs, fax machines and copiers in their offices.

The Bottom Line

If you're considering remanufactured supplies as a quicker and easier way to save money than a fleet optimization, ask how much time and money you're willing to put into the proper selection, qualification, and quality assurance of your remanufactured supplies. Remember that though laser printer supply costs are especially visible, they may actually be outstripped by other hard costs, such as printer equipment, parts, and external service. Since many organizations lack the time and attention span to do a proper job of both sourcing remanufactured supplies *and* fleet optimization, they should first bring their printer fleet under control through assessment, optimization and monitoring and *then* look at their supplies sourcing.